

Exploring the Foreign Language Book Borrowing Habits of University Instructors and Prospective Teachers (2012–2022)

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Abstract

Understanding the widespread adoption of foreign language books (FLBs) is imperative for language learners and educators, as it facilitates evaluating the efficacy and caliber of language resources. Using MARC-based bibliography analysis, the researcher uncovers publishing and subject information of popular FLBs and utilizes survival analysis to calculate the FLBs' survival index. After conducting factor analysis, the researcher applies linear regression prediction and Bayesian estimation to determine the total number of FLB borrowings and borrowers. The borrowing index of FLBs collected in the past five years surpasses that of books collected for more than five years, and staff members demonstrate higher borrowing activity compared to undergraduate students, postgraduate students, and other readers. Acceptance emerges as the most critical factor influencing the total number of FLB borrowings and borrowers, cultural dominance has a relatively minor impact, and personal background is found to be less negatively influential. The estimates of the total number of FLB borrowers indicate that acceptance is constrained by personal background, which is restricted by cultural dominance.

Keywords: Teacher, Foreign language book, Survival analysis, Factor, Regression, Bayesian

1. Introduction

Publications play a crucial role in knowledge exchange, providing abundant reading materials for professional development and daily work. Journals, textbooks, and research papers are available materials (du Sautoy, 2021). Reading is a fundamental learning objective for college students, facilitating knowledge acquisition and academic growth, particularly in

cross-cultural communication. College students are required to rapidly absorb and analyze substantial volumes of intricate textual content (Yapp et al., 2023). Insufficient access to up-to-date and comprehensive reading materials may present challenges for students pursuing advanced subjects. According to Dignath et al. (2022), textual reading in pre-service teacher education shapes the educational perspectives of instructors. Despite this, many teachers need more resources or methodologies to teach reading effectively at the outset of their careers, resulting in an information gap between teachers and students.

Extensive reading of foreign language books (FLBs) holds particular significance for teachers and teacher candidates in normal universities. This practice can enhance their vocabulary, comprehension, and critical thinking skills and expose them to diverse perspectives, cultures, and ideologies, broadening their horizons and promoting open-mindedness. Providing evidence-based literacy teaching and guidance to language learners is essential to meet their reading requirements for classes, papers, conferences, and teaching. Professional development focusing on English language learners' literacy and language needs is indispensable to support teachers in adopting evidence-based reading instruction and intervention strategies (Shelton et al., 2023).

When recommending foreign language books, librarians should first identify an appropriate audience. Utilizing Machine-Readable Cataloging (MARC) and its associated fields of FLBs can provide valuable insights into reading habits based on existing book-borrowing data. The metadata in the MARC record, including author, title, and subject, serves as significant search points for the bibliography, shaping readers' initial impressions and influencing their borrowing decisions. Given the differing cataloguing regulations between Chinese Machine-Readable Cataloging (CNMARC) and Universal Machine-Readable Cataloging (UNIMARC), librarians also require a thorough understanding of cataloguing rules to extract diverse fields for classification statistics. Reading instruction is a complex cognitive activity that should be informed by evidence-based practices tailored to specific circumstances (Toste & Lindström, 2023). Tracking reader behaviors through MARC-linked circulation information empowers librarians and information professionals to understand their patrons better, enabling them to offer more personalized services.

The borrowing behaviors at the NNU library indicates a higher frequency of borrowing Chinese books among teachers and teacher candidates compared to FLBs. Borrowing from FLBs shows irregular and infrequent patterns, with many individuals borrowing only a few foreign language books. Over time, most older collections have been disregarded, while classic works are increasingly borrowed the longer, they have been available in the library. Introducing survival analysis can enhance our comprehension of the borrowing activity of books with varying storage years. Data sparsity arises when there is limited information available for users or FLBs. To tackle this challenge, researchers often opt to enhance the algorithm's complexity (Devika & Milton, 2024). For example, the impact of a variable on model response is determined by ranking associated random variables based on their relative relevance (Haukaas, 2023). The study also utilizes ranking methods to perform statistical analysis on the frequency of cities, publishing houses, subjects, and more. The interconnected fields yield diverse statistical indicators, with factor analysis eliminating redundant

information through data structure and correlation analysis and extracting latent variables via data dimensionality reduction. These common factors can be utilized in linear regression and Bayesian network estimation.

In addition, to offer practical guidance for educators and those preparing to become educators, it is crucial to examine the root causes of FLB borrowing. According to Wang et al. (2022), extracting causal information from data can aid in various machine-learning tasks, including classification. They recommend quantifying, characterizing, and evaluating causal relationships within the framework of Bayesian network learning. A Bayesian network representing the total number of borrowings and borrowers of FLBs quantifies the strength of relationships using conditional probability.

Reading is not merely a pastime but a vital, lifelong activity that significantly enhances communication, fuels learning, and facilitates the exchange of ideas. In times of crisis, such as the unprecedented global COVID-19 pandemic, the role of reading and the spaces that support it, like libraries, become even more critical. Libraries have emerged as sanctuaries providing emotional support and solace to many readers, serving as pillars of resilience in turbulent times. This study ventures into the exploration of a network of relationships among Foreign Language Books (FLBs) with the aim of uncovering hidden connections between them. By doing so, it seeks to validate existing theories and concepts across linguistic, sociological, and educational domains. Moreover, this study acknowledges a notable gap in the continuous analysis of reading habits, specifically addressing the lack of data concerning Chinese university teachers and teacher candidates engaged with FLBs. The investigation into these reading habits is not just an academic exercise but has profound practical implications. It aims to inform educators and policymakers in China and potentially around the globe, enriching the discourse on the pivotal role of reading in language acquisition and education at large. This research underscores the need for a nuanced understanding of reading's impact, particularly in an era where digital distractions are rampant, and reading for pleasure and education faces numerous challenges. By mapping out the intricate web of relationships surrounding FLBs, this study intends to contribute significantly to our understanding of how reading shapes and is shaped by cultural, educational, and social forces. It highlights reading's undiminished importance in fostering a well-informed, empathetic, and linguistically capable society, especially in the context of global challenges and the ever-evolving landscape of language learning.

2. Previous Researches

The modern educational landscape demands that students cultivate a sense of creativity and curiosity as they delve into new subject matter. According to Pasawano et al. (2023), this involves effectively expressing acquired knowledge and comprehending the mechanisms and motivations behind how things function. The foundational components of a reading culture comprise four key elements: reading skills, behaviors, habits, and influences (Aslam et al., 2022). Furthermore, Pasawano et al. (2023) emphasize recognizing three distinct types of information processing during reading: graphic, semantic, and syntactic. A reader's comprehension level is significantly impacted by their background knowledge, language

proficiency, interest level, reading techniques, and cultural perception of reading (Aebersold & Field, 2018). In their work, Kang et al. (2021) posit that readers typically grasp the essence of a text and may not necessarily concentrate on its formal structure. Their cumulative life experiences shape students' capacity to comprehend written material. To provide students with more comprehensive reading experiences that resonate with their individual and cultural backgrounds, educators can employ various tools such as curriculum design, in-depth topic knowledge, and diverse teaching methods (Perkins, 2013).

Alaei and Parsazadeh (2021) have categorized textbooks within English language environments into three distinct groups—local, localized, and international—while evaluating educators' and students' cultural vantage points. Geopolitical cultural biases can lead to prejudice and discrimination. Lovtsevich and Sokolov (2020) have examined the adoption of English vocabulary from Northeast Asian countries, highlighting that terminology linked to these regions often reflects Western cultural preferences rather than those of the region itself; this can result in an absence of accurate representation and a dominance of Anglo-centric viewpoints in the definitions of Northeast Asian headwords. Liu et al. (2021) have noticed a predominance of American and British cultural contexts in foreign language textbooks, with the cultures of other inner-circle countries being placed at the periphery and the outer and expanding-circle countries primarily overlooked. Teachers and students have raised concerns about the lack of representation of diverse cultures in international textbooks and the exclusion of minority cultures. Additionally, there is a need for better representation of culture in both local and localized textbooks.

The digital age has led to declining reading habits and decreased reading proficiency. The current literature extensively delves into the three primary elements that impact reading motivation: gender, age demographics, and geographic location. A noteworthy cross-cultural study by Kambara et al. (2023) sought to probe the disparities in reading motivation between American and Chinese college students concerning country and gender. Their findings revealed the intricacy of Chinese college students' reading motivation: self-efficacy, reading interests, information acquisition, readiness for professional assessments, social connections, and personal development. Furthermore, Riggi and Vermunt (2011) utilized multilevel mixture factor analysis to unravel the complexities of students' reading motivation. Their research underscored the impact of factors such as the instructors' approach, expertise, educational background, personal drive, and the students and their families on motivation variances.

Data-driven education (Toste et al., 2023) involves gathering and utilizing student progress data to determine the level of support and personalized instruction needed for students facing learning challenges. Teachers analyze student data to tailor their instructional methods, while academic libraries in higher education institutions curate reading lists for students with special needs. Research on reading often draws conclusions about the effectiveness of programs or overall approaches to teaching based on comprehensive analyses of data. The reading lists are curated using localized intelligence that accounts for academic experience, subject matter familiarity, and awareness of current trends (Chowdhury et al., 2023). When policymakers consider implementing a program in their schools, they typically review the

costs and impacts examined in studies involving a student population similar to their target audience (Hollands et al., 2016).

The primary objective of evaluation is to furnish information upon which decisions can be predicated. Embracing a positivist approach to performance measurement entails acknowledging that the decision maker has effectively formulated the problem and is confident in the methodologies and tools for precise assessment and measurement of education (Schlickmann & Bortoluzzi, 2023). The evaluation process should involve determining the stakeholders, defining the scope of the evaluation, selecting the appropriate methods, and interpreting the findings (Jackson, 2001). Social network analysis has gained popularity in sociology and related fields due to advancements in statistical modelling and the expansion of network data (An et al., 2022). Factor analysis is commonly employed to explicate the relationship between observable variables and underlying continuous latent variables. Factor models are proficient in handling continuous, dichotomous, or ordinal indicators. Statistical techniques such as hypothesis testing, likelihood ratios, and Bayesian models are employed for rigorous investigations following formal statistical procedures (Kafadar, 2020).

The prevailing body of research exploring the nexus between correlation and causality in academic and policy-relevant contexts has predominantly been descriptive. This has introduced significant challenges to the robust and rigorous application of findings to inform policy-making and practice adaptation. As An et al. (2022) highlighted, there needs to be more literature regarding the methodological rigor and the applied utility of research findings. This gap underscores the necessity for a more nuanced approach that transcends traditional universal assessment methodologies and tools. Schlickmann & Bortoluzzi (2023) further emphasize this point, advocating for a strategy that prioritizes considering contextually significant situations often marginalized or overlooked in broader research designs.

A critical review of prior studies reveals a few notable flaws that have hindered the progression towards more meaningful and applicable research outcomes. The present study addresses these gaps by introducing several innovative elements that set it apart from previous research. Firstly, it utilizes circulation data from a cohort of teachers and teacher candidates at a Chinese university spanning a decade (2012-2022). This longitudinal approach yields a robust dataset and allows for exploring temporal trends in reading behaviors, which has yet to be addressed in previous studies. Moreover, this research pioneered integrating CNMARC and UNIMARC cataloguing systems to navigate the challenges inherent in cataloguing practices for literature in Chinese, Japanese, and Korean languages. This integration is particularly significant as it allows for a more nuanced and comprehensive analysis of reading patterns across different linguistic and cultural contexts. By employing CNMARC cataloguing with localized field enhancement, the study effectively captures the unique characteristics of Chinese and other Asian languages' literature. Concurrently, using UNIMARC data to analyze foreign books facilitates a more holistic understanding of the global literary landscape as engaged by the university community. The application of MARC metadata for a detailed analysis of reading behaviors at a granular level can address the limitations of previous studies that could have leveraged such detailed

cataloguing data and opened up new avenues for understanding the specificities of reading preferences and behaviors.

Furthermore, the study introduces a survival analysis based on the circulation data, offering a fresh perspective on the relationship between book lending and duration in the library. This methodological innovation allows for a more detailed exploration of the dynamics of book borrowing, which, as Weaver et al. (2018) suggest, can yield measurable values and directions for the correlation between various variables involved. By focusing on group characteristics and employing a macro-level discussion framework, the study facilitates a broader discourse on the reading behaviors of the university community. This addresses the flaws of previous studies, which often needed a comprehensive discussion on group dynamics, but also enriches the academic discourse by providing insights into the collective reading patterns within an educational institution. This study marks a significant advancement in the research on correlation and causality within the context of reading behaviors and library practices. Its innovative methodological approaches and its focus on previously overlooked aspects set a new benchmark for future research in this domain.

3. Date and Method

3.1 Bibliography Analysis

The sample comprises 14,102 books, including 13,886 in Western languages, 202 in Japanese, and 14 in Russian. These are publications borrowed from 2012 to 2022. Data regarding cities, companies, titles, and authors is gathered from various statistical fields, including UNIMARC 260, 110, and 245, as well as CNMARC 200 and 210. This information is utilized to analyze the press and publications in significant cities. Additionally, the frequency of personal names, topical terms, geographical names, and genre forms of borrowed books is examined to discern the prevalent subject distribution in these publications. The data is sourced from UNIMARC 600, 650, 651, and 655 statistical fields, and CNMARC 600, 601, 602, 605, 606 and 607.

3.2 Survival Analysis

The sample comprises 9,819 borrowers of FLBs from 2012 to 2022, with their collective borrowings amounting to 35,447. Survival analysis was conducted on the borrowing data using SPSS. To determine the duration for which a book has been in the collection, the year the book was placed in storage was subtracted from 2023. For the reader type and gender fields, the following values are assigned: undergraduate 1, graduate 2, faculty 3, and other types 4; Male 1, Female 2. After setting the corresponding parameters, such as time intervals from 0 to 23 by 4, total borrowing times as Status (ranging from 1 to 421), and choosing the factor reader type (min 1, max 4) or gender (min 1, max 2).

3.3 Factor Analysis

The provided sample aligns with the sample used in survival analysis. To reduce the data's dimensionality, factor analysis is conducted in SPSS. When inputting values into Excel, the researcher starts numbering from 1 instead of using frequency values directly to avoid

confusion. Treat countries and departments with equal frequency as analogous entities. Within the factor analysis dialogue box, select relevant variables such as total borrower, the total number of borrowings, copy, city frequency, publishing house frequency, country, author frequency, title frequency, reader type, reader gender, reader frequency, book renewal, publication type, department, and more. Then, access the descriptives box and choose the initial solution and KMO and Bartlett's test of sphericity. Proceed to the extraction box and opt for the unrotated factor solution and scree plot, based on eigenvalue. Finally, go to the rotation box and select varimax.

3.4 Regression

The provided sample aligns with the one used in survival analysis, and it involves grouping variables based on the outcomes of factor analysis. Linear regression analysis is conducted in SPSS. Save the scores of the common factors generated in factor analysis and use them as independent variables for linear regression analysis, employing the "enter" method to predict the total borrowings and borrowers of FLBs.

3.5 Bayesian Estimation

The provided sample aligns with the one used in survival analysis. And it involves grouping variables based on the outcomes of factor analysis. Bayesian estimation is conducted using the SPSS modeler. The targets for this model are the total number of borrowings and borrowers of FLBs respectively, while the inputs consist of the scores derived from common factors identified in factor analysis.

4. Result

4.1 Popular FLBs Portrait

The analysis in Figure 1 presents data on the high-frequency distribution of cities, publishing houses, titles, and authors of FLBs based on word frequency. Beijing, New York, and London are the primary welcomed publishing hubs. Beijing-based publishers, such as World Book Inc., Peking University Press, and Tsinghua University Press, cover a broad spectrum of topics, including interdisciplinary publishing, Chinese language publishing, scientific publishing, children's publishing, and others. Similarly, New York-based publishers like McGraw Hill Book Co. and Harper & Row Ltd and London-based publishers such as Oxford University Press and Cambridge University Press specialize in producing an extensive range of books, including reference books, textbooks, and literary works.

Moreover, significant North American publishers such as Houghton Mifflin, Addison Wesley Publishing Company, The University of Chicago Press, and Thomson Reuters also play crucial roles. In Europe, influential publishers include Verlagsgruppe Bertelsmann GmbH, Verlagsgruppe Georg von Holtzbrinck, Springer Verlag GmbH & Co. KG, Hachette Livre, Wolters Kluwer, and Elsevier Science Publishers. Influenced Asian publishers include Shanghai Foreign Language Education Press, Joint Publishing, and Southeast University Press. Japanese publishing houses like Kodansha and Iwabo Bookstore are also significant.

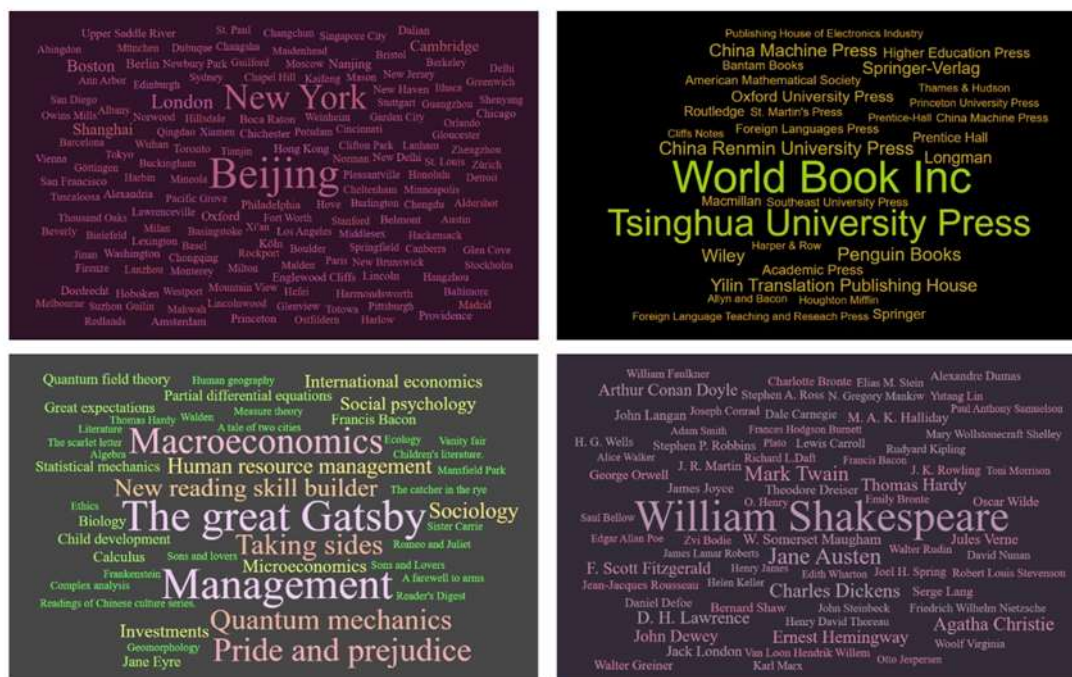


Figure 1. The publishing information of popular FLBs



Figure 2. The subject information of popular FLBs

The word cloud in Figure 2 presents information on high-frequency personal subjects, topical term subjects, geographical name subjects, and genre forms based on word frequency. Teachers and teacher candidates at NNU enjoy reading FLBs related to British and American literature, English language and culture, mathematics and physical sciences, education, psychology, and professional skills such as management, law, accounting, and computer

science. The most popular books among readers are those centered around Shakespeare and his works. Literary characters and writers, linguists, psychologists, educators, and politicians are noted to have a significant impact on readers.

4.2 Borrower Portrait

The maximum borrowing for FLB borrowers is 457, with a mean of 3.61, a median of 2, and a standard deviation of 8.190. There are 7,600 female borrowers, which accounts for 77.4% of the total, and 2,219 male borrowers, accounting for 22.6%. Among the borrowers, 5,315 are undergraduate students, making up 54.1%, while 3,506 are postgraduate students, accounting for 35.7%. There are also 484 staff members, making up 4.9% of the total. The average borrowing mean values for different categories of individuals are as follows: undergraduate students 3.15; postgraduate students 3.93; staff 7.44; and other categories 2.55. When broken down by gender, the mean value for males is 4.31, and for females, it is 3.41.

4.2.1 FLBs Survival Index

The median survival time for undergraduate students is 15.01; for postgraduate students, it is 13.61; for staff, it is 20.16; for other types, it is 7.47. For males, it is 14.72; for females, it is 13.76. The survival plots of reader type and gender are displayed in Figure 3.

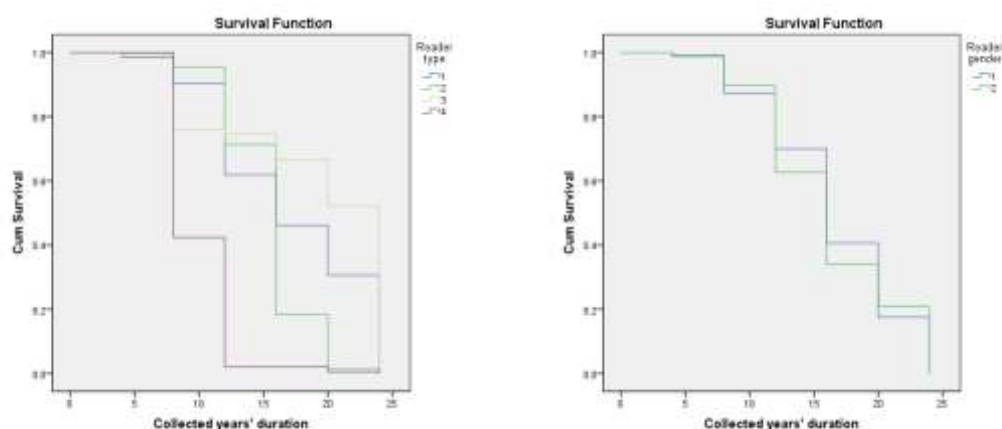


Figure 3. Survival plots

The survival function provides the probability of an FLB borrower's activity over the years that FLBs have been collected. Generally, staff members exhibit higher borrowing activity than undergraduate students, postgraduate students, and other readers. Postgraduate students borrow more than undergraduates when FLBs have been collected for less than or equal to 15 years. However, undergraduate students borrow more than postgraduate students when FLBs have been collected for over 15 years (refer to Figure 3 on the left). Both graduate and undergraduate students experience a relatively small change, while other readers witness the fastest decline in cumulative survival rate and significant changes in FLB borrowing activity.

On the other hand, the cumulative survival rate of staff decreases slowly, with a relatively small change in FLB borrowing activity. Regarding gender, females show higher borrowing activity than males when FLBs have been collected for less than or equal to 10 years and more than 20 years. In contrast, males exhibit higher borrowing activity than females when

FLBs have been collected for 11 to 20 years (refer to Figure 3 on the right). Compared to males, females experience the fastest decline in cumulative survival rate and significant changes in FLB borrowing activity.

4.2.2 Latent Variables

The obtained P-value is 0.000, and the KMO and Bartlett’s test coefficient is 0.616, with an approximate chi-square value of 130098.294, indicating that the data structure and correlation are not ideal. Factor analysis was pursued due to the large sample size. The scree plot in Figure 4 illustrates the variance accounted for by various factors. Notably, the initial steep decline followed by a gentler slope suggests meaningful factor extraction. The first two factors display significant eigenvalues and substantial changes, making a notable contribution to explaining the original variables. The correlation coefficients in the rotated component matrix (Table 1) indicate the relationship between variables and common factors. The researcher ultimately selects three common factors, although the significance of the third factor is not as apparent as the first two, considering the practical significance and factor items.

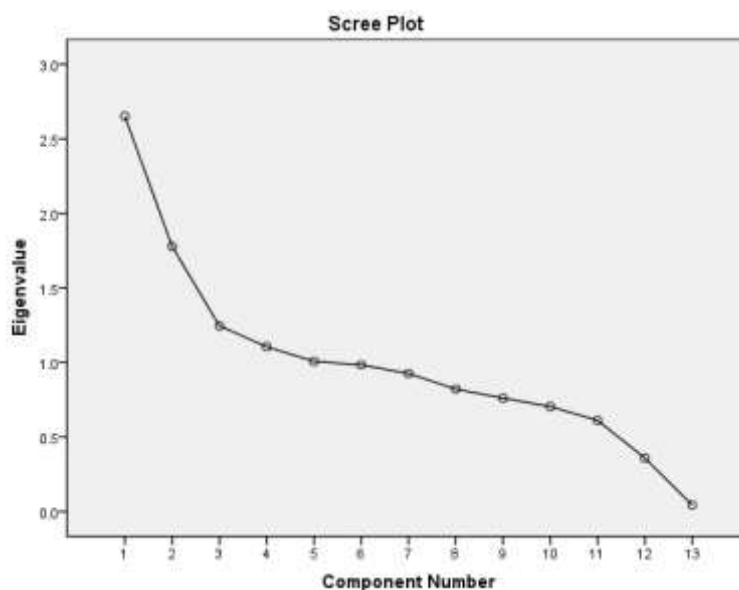


Figure 4. Scree plot

The data presented in Table 1 indicates that the first common factor (F1) effectively encompasses the total borrowers, total number of borrowings, and copy, denoted as “acceptance.” The second common factor (F2), representing the frequency of the city, publishing house, and country, is referred to as “cultural dominance.” The third common factor (F3) is termed “personal background” and signifies the gender, department, and reader type.

Table 1. Rotated component matrix

	Component		
	1	2	3
Total borrowers	0.901	0.081	-0.016
Total number of borrowings	0.885	0.120	-0.027
Copy	0.630	-0.054	0.004
City frequency	0.000	0.873	-0.015
Publishing house frequency	0.070	0.812	-0.052
Country	-0.015	-0.681	-0.077
Reader gender	-0.063	0.030	-0.769
Reader type	-0.122	0.052	0.584
Department	0.028	0.000	0.510

4.3 FLB Borrowing Prediction

Figure 5 depicts the outcomes of the normal distribution assessment for the three variables, indicating that the data points are expected to align closely with the diagonal line.

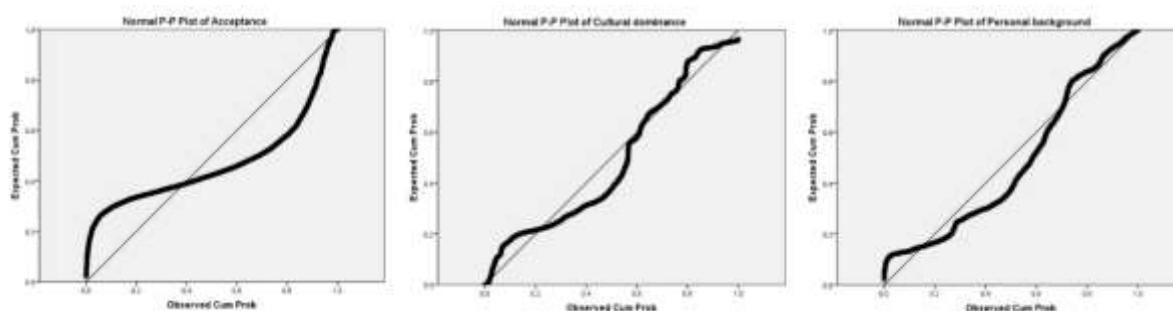


Figure 5. Nominal P-P plots

The initial linear regression analysis showed a robust model fit using the total number of FLB borrowings as the dependent variable. It was supported by an R-squared value of 0.798 and a p-value of 0.000. The regression coefficients for this model can be found in Table 2. The regression standardized residual refers to Figure 6 on the left.

Table 2. Coefficients of the regression for the total number of borrowings

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	17.462	0.071		246.253	0.000
	Acceptance	26.301	0.071	0.885	370.889	0.000
	Cultural dominance	3.570	0.071	0.120	50.338	0.000
	Personal background	-0.805	0.071	-0.027	-11.351	0.000

The second linear regression model used the total number of FLB borrowers as the dependent variable. A robust model fit was observed with an R-squared value of 0.819 and a p-value of 0.000. The regression coefficients for this model can be found in Table 3. The regression standardized residual refers to Figure 6 on the right.

Table 3. Coefficients of the regression for the total borrowers

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
2	(Constant)	15.410	0.071		216.330	0.000
	Acceptance	28.396	0.071	0.901	398.627	0.000
	Cultural dominance	2.564	0.071	0.081	35.988	0.000
	Personal background	-0.513	0.071	-0.016	-7.205	0.000

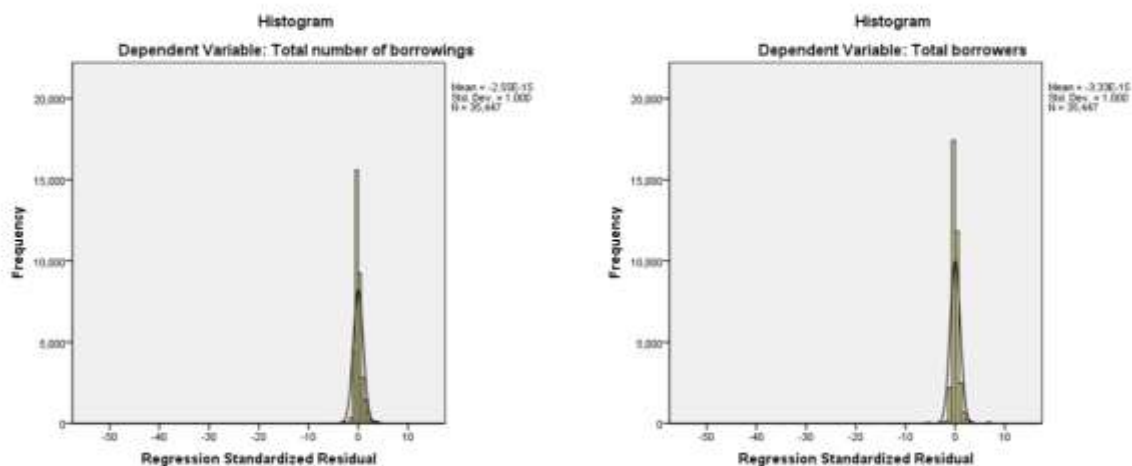


Figure 6. Histograms

Upon examining the standardized coefficients presented in Tables 2 and 3, it was determined that acceptance (F1) emerges as the most crucial factor in determining both the total number of FLBs borrowings and the number of borrowers. FLBs that readers and libraries widely recognize tend to experience higher borrowing volumes and readership. Additionally, cultural dominance (F2) has a relatively minor impact on FLB borrowing. However, the influence of

personal background (F3) on FLB borrowing was found to be less negative but still significant.

4.4 FLB Borrowing Conditional Probabilities

DAG in Figure 7 indicates that acceptance, cultural dominance, and personal background constrain the total number of borrowings and borrowers. In predicting the total number of borrowings for FLBs, acceptance is restricted by cultural dominance, which in turn is constrained by personal background. However, this constraint relationship is very fragile, and the influence of factors is low. In estimating the number of FLB borrowers, acceptance is limited by personal background, which is constrained by cultural dominance. Acceptance is crucial in determining the number of FLB borrowers, as its estimated value exceeds 0.4. With a conditional probability, it is predicted that there will be only one borrower when acceptance is less than or equal to 4.682.

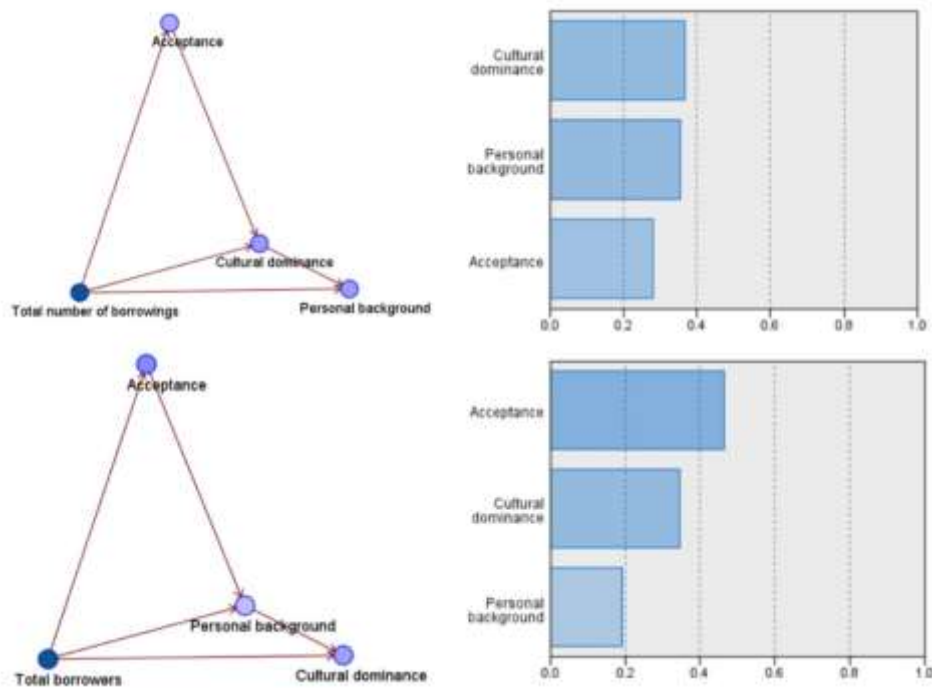


Figure 7. Directed acyclic graph (DAG)

5. Discussion

5.1 The Significance of Consistency Recognition

In consumer behavior, homogeneity cognition emerges as a critical predictor in the context of borrowing FLBs. The halo effect complements this, a psychological phenomenon that underscores the impact of initial impressions on subsequent judgments about others, suggesting a subjective lens through which individuals are evaluated based on limited information. Given the increasing reliance on peer experiences for product or service selection, it is evident that personal endorsements play a pivotal role in shaping consumer choices. These endorsements, manifesting through word-of-mouth, surveys, and articles, have

found a dominant platform on social media. This evolution underscores the significance of shared sentiments and emotions in influencing decisions, highlighting a paradigm shift in how information is communicated and received (Luțan & Bădică, 2024).

The relationship between academic impact assessment and the utilization of multi-level information underscores a nuanced approach to evaluating scholarly work, challenging the traditional reliance on citation data alone (Zhou, 2022). This approach accommodates variables such as critical information recall and educational perspectives, providing a holistic view of an academic's influence. Moreover, contemporary insights into youth engagement with reading reveal a layered relationship between material and social influences. It is observed that young individuals' reading habits are significantly shaped by their involvement in extracurricular activities, such as arts and sports. These interests, in turn, foster a conducive environment for reading, driven by a natural inclination towards subjects that resonate with their extracurricular engagements (Boyask et al., 2024).

In the realm of language acquisition and reading, the integration of various perceptual and cognitive systems is essential. The definition of an academic concept, structurally made up of multiple prototype information components, expresses the concept's distinctive qualities and position within the body of knowledge (Latu, 2018). These knowledge chunks appear to be put together somewhat frequently, utilizing particular linguistic constructions that link the ideas given in the definition. Information stimuli activate the hippocampus through encoding processes in working and long-term memory (Stern & Hasselmo, 2022). This complex process is further complicated for linguistically diverse students, for whom language ideologies may pose additional challenges. Inconsistencies in language usage among educational texts and practitioners pose a significant concern, potentially marginalizing critical theory, research, and reasoning within professional disciplines. This inconsistency challenges the epistemological advancement of professions, urging a reevaluation of communication strategies to foster a more inclusive and effective educational landscape (Webber, 2010).

5.2 The Importance of Multiculturalism

The importance of multiculturalism in the modern world cannot be overstated, particularly when considering the flow and reception of FLBs. The concept of multiculturalism extends far beyond the simple acknowledgement of cultural differences. It involves a deep understanding and appreciation of these differences, particularly in how they shape communication, learning, and the dissemination of information. Cross-cultural communication enables effective dialogue between diverse groups, ensuring that foreign and native cultures are respected and understood. The mindful use of language, sensitive to the nuances of different cultures, becomes paramount in this process (Wei & Wang, 2022). In education and literature, language serves not only to convey information but also to express cultural values and perspectives. Verbal coding plays a crucial role in cognitive tasks, as demonstrated by contemporary cognitive psychology (Coltheart et al., 1975). The process of syntactic processing, where several languages might compete with one another, highlights the complexity of cross-language transfer effects that can occur during the reading and

understanding of FLBs (Tiffin-Richards, 2023). This linguistic competition underscores readers' need to possess a keen awareness of cultural nuances to fully grasp the intended meanings and implications behind foreign texts.

Furthermore, the direct impact of cultural background on a learner's understanding emphasizes the need for educators and publishers to be mindful of varying cultural norms and values (Zhang & Su, 2021). Such mindfulness ensures that FLBs are not only accessible but also resonate with readers from diverse cultural backgrounds, fostering a more inclusive and effective educational landscape. For example, Western and Eastern European cultural circles offer distinct literary traditions and perspectives that can enrich a reader's understanding of the world. Through the lens of multiculturalism, readers and scholars alike can appreciate the unique contributions of different cultures to the global tapestry of knowledge and literature.

Embracing multiculturalism in the context of FLBs highlights the importance of cross-cultural communication and the mindful use of language. The book publishing industry needs to meet the demands of the Internet era, leading to decreased consumer interest in books, inventory accumulation, and reduced revenue. To address this, publishers must acquire target information and technical knowledge to integrate new information technologies. The industry is becoming increasingly necessary to adopt advanced data mining technology (Bian, 2023). A certain level of coherence is indispensable in providing a clear basis for evaluating human cultural achievements. Understanding the global phenomenon of Shakespeare's popularity and the widespread teaching and appreciation of his works becomes easy in light of this perspective. Pedagogical challenges such as coinages, borrowings from foreign languages, archaic terminology, and false cognates have been discussed in recent decades (Murphy et al., 2020).

Moreover, readers spend more time processing information that aligns with their beliefs than information that contradicts them. This influences their comprehension levels and reading perspectives (Abendroth & Richter, 2023). It encourages a holistic understanding of texts that transcends mere translation, promoting a deeper engagement with the rich diversity of global cultures. Science-based argumentative texts are similar to expository scientific texts in content and structure and should be associated with higher universality ratings. On the other hand, personal case-based texts should be evaluated as less universality than science-based texts due to their reliance on limited personal experiences and emotions. Prior beliefs influence readers' perceptions and acceptance of different argument types (Persing, 2016; Savvidou et al., 2024).

Multicultural identity is shaped through communication and self-identification. Sojourners develop a multicultural identity by adapting to different cultures (Biwa, 2022). Negative multicultural experiences can increase intergroup bias, mediated by changes in intergroup ideologies/worldviews, such as social dominance orientation (Affinito, 2023). Cultural intelligence directly and indirectly affects teachers' attitudes towards multicultural education. Intercultural sensitivity plays a crucial role in this relationship. Enhancing teachers' cultural intelligence and intercultural sensitivity is essential for the effectiveness of multicultural education (Katitaş et al., 2024). The influence of multicultural personality traits, such as

cultural empathy, open-mindedness, and flexibility, predicts teachers' management styles when managing intercultural conflicts (Vallone et al., 2022). According to Merry (2005), cultural coherence refers to how a particular group shapes an individual's identity and psychological consistency, allowing individuals to make sense of their surroundings, interact with others, and form judgments based on a specific conceptual framework. Libraries, as ideal multicultural spaces, attract people from diverse ethnic backgrounds in their quest for knowledge. Hence, it is essential to devise a suitable strategy to uphold intercultural communication practice's importance and influence, as Holbeach et al. recommended in 2023. This underscores the need for aspiring librarians to possess cultural competence as an indispensable tool for recognizing and addressing a wide range of cultural characteristics (Nath & Chutia, 2021).

5.3 Gender Differences

The discourse on gender-related differences in cognitive abilities and educational behaviors has been a subject of extensive study. One of the foundational pieces of research in this discourse was conducted by Coltheart et al. (1975), who illustrated that there are discernible variations in the cognitive abilities of males and females. Specifically, their study highlighted that females generally outperform males on verbal tasks—including verbal fluency, articulation, and spelling—while males excel in visuospatial tasks, such as maze learning or form-board tasks. This early work laid the groundwork for subsequent research exploring the intricacies of gender differences in cognitive functions and educational behaviors.

Expanding on this theme, Dinçer and Çilek (2022) made significant strides in understanding the relationship between gender, critical thinking, and metacognitive awareness. Their meticulous application of the metacognitive awareness of reading strategies inventory, the critical thinking attitude scale, and a demographic information form revealed that women exhibit substantially higher levels of critical thinking attitudes and metacognitive awareness than their male counterparts. Notably, the study also found a considerable correlation between the enhancement in metacognitive awareness and the scores on critical thinking components, emphasizing how using metacognitive awareness strategies increases with higher engagement in critical thought. This suggests a gender-based divergence in language behavior and learning strategies, particularly highlighting the role of metacognition in mediating the relationship between gender and educational outcomes.

Further exploration into gendered patterns in reading preferences and habits was conducted by Jabbar and Warraich (2023). They observed distinct preferences among male and female respondents regarding the type of reading materials they engage with. Their findings indicate that female respondents visit libraries, read more frequently than their male counterparts, and have a pronounced inclination towards fiction and online materials. Conversely, male respondents preferred non-fiction and printed materials, with their reading habits primarily influenced by their fathers and peer groups. This dichotomy extends to the ease of reading between print and digital resources, shedding light on how gender influences reading behaviors. In a forward-looking study by Mog and Gayan (2024), female respondents exhibit a higher frequency of reading electronic and print materials than their male counterparts, and

both genders find print resources easier to read than digital resources.

This study reveals that while female teachers and candidates show fluctuations in borrowing frequency, they exhibit a distinct advantage in borrowing activities, especially concerning older books collected over more than 20 years. On the contrary, male teachers and candidates are characterized by higher levels of sustained activity in borrowing FLBs, particularly those collected for 5–20 years. Supported by Bayesian networks, these findings underscore the importance of considering gender differences in the context of foreign language acquisition. Given the intricate nature of gender-based variations in cognitive abilities, critical thinking, metacognitive awareness, reading preferences, and educational behaviors, educators, policymakers, and researchers should employ nuanced, gender-sensitive methods when crafting and executing educational strategies and policies. This will ensure that all learners' unique needs and capabilities are appropriately acknowledged and supported.

5.4 The Needs of Faculty Members

The exploration of faculty and staff's engagement with FLB borrowing highlights a notable disparity in library usage patterns compared to the student body, underscoring a pronounced proclivity amongst educators toward international scholarly resources. This phenomenon is intricately linked to the amount of time various academic populations spend within the educational ecosystem. It delineates a hierarchical structure wherein staff members, followed by undergraduate and graduate students, exhibit varying degrees of library interaction, ostensibly influenced by their academic commitments and campus presence.

Diving into the motivations behind the pursuit of socioscientific literature, it becomes evident that the drivers are multifaceted, encompassing a spectrum from the desire for active discourse participation to the innate quest for knowledge, as delineated by Abendroth & Richter (2023). This pursuit is not merely an academic exercise but significantly shapes information's perceived value and assimilation, critically dependent on the reader's intent and underlying disciplinary knowledge. Integrating this facet of academic identity into the pedagogical development of university educators emerges as a formidable challenge, with the recognition of this interconnection, as highlighted by van Dijk et al. (2023), essential for fostering an enriched educational milieu.

In academic circles, book generally represents the physical embodiment of scholarly achievements derived from intellectual labor. Monographs have been the primary manifestation of scholarly effort for quite some time. Although articles in specific fields like economics have surpassed monographs as the primary medium for scientific communication, the monograph remains a vital form of scholarly communication and a critical measure of a successful career in disciplines such as social anthropology and history. The standards for what qualify as a high-quality monograph vary by discipline. Nevertheless, the evaluation method mentioned earlier remains relevant (Tereza & Ludek, 2018). Readers with limited exposure to international literature may prefer classic or renowned works and exhibit little interest in exploring foreign literature.

Conversely, readers who are well-versed in foreign literature and interested in international

publications are more likely to be drawn to recently published works. The connection between reading beliefs and tendencies toward lifelong learning is influenced by enthusiasm. Buyukgoze (2023) investigates the link between reading habits and university students' inclination for lifelong learning, showing that undergraduates' passion for reading predicts their inclination toward lifelong learning. For literature enthusiasts, classic novels offer a means to explore emotions through fiction, which may be difficult to confront in real life. They allow individuals to revisit and immerse themselves in events in which they were not present when they initially occurred (Ogden, 2022).

The examination of cross-disciplinary correlations further reveals a nuanced understanding of academic dichotomies, particularly within linguistics, ethnology, and archaeology, where stronger interrelations are observed (Zhang et al., 2018). This intricacy underscores the indispensability of specialized knowledge in facilitating effective second language acquisition pedagogies, necessitating a comprehensive grasp of linguistics and cognitive dynamics for educators. The imperative of academic English proficiency within this context cannot be overstated, framing the landscape for international scholarly exchanges and the operational dynamics of English as a Second Language (ESL) and English as a Foreign Language (EFL) learning environments. The elucidation of a reflective approach to EFL education by Karimi et al. (2024) presents a nuanced framework for pedagogical enhancement, characterized by a ten-stage model encompassing teaching methodology's theoretical and practical orchestration. This model advocates for a cyclic engagement with knowledge, from acquisition to application and review, promising to augment the teaching fabric with a robust reflective practice. Furthermore, the multifaceted nature of reading skills and the impact of language ideologies on linguistically diverse students (Thoma, 2022) highlight the complex interplay of cognitive, perceptual, and sociocultural elements in the educational journey. This textured landscape invites an ongoing dialogue among educators, policymakers, and stakeholders to reimagine and recalibrate pedagogical strategies that accommodate and nurture diverse intellects within academic domains.

6. Limitation

The research venture meticulously delves into the intricate dynamics of FLB borrowing habits by dissecting the influences stemming from reader demographics. At the heart of the study, three pivotal elements emerge as critical determinants in the borrowing patterns observed within FLBs: acceptance within their social and educational spheres, the pervasive cultural influences that shape reader preferences and behaviors, and the deeply ingrained personal backgrounds that uniquely tailor each reader's approach to library borrowing. By bringing these factors to light, the research presents a nuanced framework through which the effects of these variables on FLB borrowing activities can be critically assessed. Expanding beyond the surface, the findings drawn from this investigation stand to bolster various facets of library and educational engagements significantly. For instance, the insights gleaned could revolutionize reference book recommendations, pedagogical support mechanisms, bibliographic suggestions, and the overall development of library resources. By incorporating the study's outcomes, the likelihood of encountering information discrepancies and misalignments in reader interests can be markedly diminished, leading to a more informed

and satisfied library user base.

Moreover, the methodological innovations unearthed through this research pave the way for a refined analysis of book circulation trends alongside many related factors. This analytical advancement is poised to benefit a broad spectrum of stakeholders, including publishers, educators, academic researchers, and library professionals. The emphasis on understanding the psychological and behavioral underpinnings of FLBs in their borrowing endeavors underscores the critical importance of delving into reader psychographics and demographics. A notable aspect of this study is its comprehensive examination of over a decade's worth of FLBs borrowing data from a university library setting. This longitudinal approach affords invaluable insights into the evolving reading preferences and habits of an academic community comprising faculty members and students. Despite encountering challenges related to integrating disparate data modules, the researcher adeptly navigates these hurdles by strategically applying search functionalities and data matching techniques, culminating in a robust analysis. While the study predominantly leans on quantitative methodologies to unravel the patterns and trends in FLB borrowing, it needs qualitative inquiry. Qualitative research emphasizes understanding the why behind observed behaviors, providing depth and context to numerical data and offering a holistic view of borrowing phenomena. The study also recognizes the significance of accounting for the myriads of social, cultural, historical, and educational shifts that have transpired over the eleven-year data collection period. Phenomena such as the halo, Rosenthal, Matthew, and internalization effects, borne out of these shifts, underscore the complexity of interpreting borrowing behaviors and necessitate consideration in future research endeavors. With its meticulous analysis of FLB borrowing behaviors and psychology, this research substantially contributes to the existing body of knowledge. It not only enriches our understanding of reader behaviors and preferences but also sets the stage for future investigations to explore the multifaceted nature of library borrowing in an ever-evolving societal context.

Competing interests

The author declares no competing interests.

Ethical approval

This article does not contain any studies with human participants performed by any of the authors.

Data availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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