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Examining the Role of Psychological Flexibility and Occupational Stress in Biographic Popularity on the University Campus

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Abstract

This study examines the reading and borrowing behavior patterns at Nanjing Normal University Library over ten years (2014-2023) by analyzing library users' borrowing lists and biographical records. It explores the social dynamics of reading within the university community, highlighting how book sharing and peer recommendations can enhance library services. By utilizing time series association rules, the research identifies trends in borrowing that assist librarians in developing collections and allocating resources according to user interests. The study investigates the psychological factors that influence reading engagement, revealing distinct components in the reading psychology of male and female participants. For females, the components include "Socio-cultural Engagement" and "Narrative Exploration," while males show "Motivational Drivers," "Literary and Artistic Perception," and "Scientific and Technical Interest." Regression analyses confirm the predictive validity of these psychological constructs concerning reading engagement, showing that educators interact with biographical literature nuancedly. The findings enhance our understanding of reader psychology related to biographical literature, emphasizing the significance of demographic factors in shaping borrowing behaviors. This information can help shape library strategies to foster a vibrant reading culture.

Keywords: Biography, Apriori, Sequence Analysis, Structural Equation Model, University, Teacher

1. Introduction

The application of biography in various fields serves as a vital lens through which we can explore and understand the intricate tapestry of human experiences. By focusing on individual life courses and personal narratives, biographical approaches provide significant insights into how personal histories shape actions, motivations, and social interactions. These methodologies are particularly relevant in social sciences, where the interplay between individual experiences and broader cultural contexts reveals the dynamics of social change. Cultural and biographical sociologists, for instance, emphasize how the life narratives of activists can illuminate pathways for collective action and transformation. Moreover, the rich narratives that emerge through biographical inquiry are not just academic subjects but powerful instruments for interpreting cultural transformations and the broader human experience. Significant events often create opportunities for connection among diverse individuals, fostering exchanges of meaning and knowledge that can influence future movements and cultural hybrids, as Erpyleva noted [1]. The concept of object biography further enhances this discussion by examining how records and artifacts influence human relationships and values, thereby providing a deeper understanding of our social histories [2]. Biographies capture stories of resilience and the human capacity to navigate adversity, inspiring readers to pursue their goals despite challenges. They educate and enrich understanding, reflecting the complexities of life while offering guidance, solace, and engaging narratives. In psychology, biographical methods provide a comprehensive framework for exploring individuals' lives and the factors that shape their development [3]. Biography is a multifaceted tool that enriches our understanding of human behavior, bridging academic inquiry with personal experience in a profound and meaningful way.

Biography is a powerful tool for understanding the complexities of human experience, particularly within various fields such as psychology, education, and care practices. By delving into individuals' life stories, researchers and practitioners can gain richer insights into personal trajectories, including past experiences, current contexts, and future aspirations. This depth of understanding is vital for fostering empathy, promoting positive relationships, and crafting integrated and personalized care strategies. As Rudnev noted, biographical methods allow for a more holistic perspective that transcends reductionist views, reaffirming each individual's narrative's uniqueness [3]. The significance of biography extends beyond mere research utility; it connects us to broader social and cultural histories, allowing

for reflections on our own lives about those of others. Baigent highlights how biography's interplay with portraiture enhances the appeal of life writing, drawing in diverse audiences [4]. In care settings, the emerging concept of Care Biography illustrates how biography can inform a more nuanced understanding of care needs, empowering individuals to take control of their lives and promoting ethical standards in caregiving [5]. Moreover, in the context of educational practices, the narrative-biographical perspective is gaining traction as a means to enrich teaching and teacher development. By integrating reading-life histories, future educators can cultivate more dynamic interactions with literary texts, thus addressing the evolving challenges of effective pedagogy [6,7]. The application of biographical methods serves as a bridge between individual stories and broader societal contexts, making it a vital area of exploration across various disciplines.

Biographies hold immense educational significance as a powerful medium for exploring diverse life experiences and insights into human behavior. By delving into the complexities of individuals' lives, biographies help readers develop psychological flexibility, enabling them to manage stress and adapt to changing circumstances more effectively. As individuals with high psychological flexibility tend to be more open to new experiences, they may find themselves drawn to the narratives contained within biographies, which offer valuable perspectives and connections to others who have faced challenges. Exploring life stories can inspire resilience and foster empathy, enriching the educational landscape. Furthermore, secondary sources like biographies, narrative nonfiction, and expository texts can enhance students' understanding of continuity and change, particularly when juxtaposed with mini-biographies of individuals from various eras and backgrounds. Such diverse representations diversify the curriculum and create opportunities for students to engage with multiple disciplines, ultimately showcasing the agency and perseverance necessary for personal and professional growth [8,9]. As educators navigate the complexities of career progression, focusing on personal narratives can provide insights into the implicit risks associated with decision-making and career trajectories, highlighting the need for a balanced approach that embraces risk-taking as a pathway to success [10]. Additionally, involving teachers in recounting their autobiographies can be a transformative learning experience, bridging the gap between theory and practice in initial and in-service education. This engagement promotes self-reflection among educators and contributes to a richer understanding of the teaching profession.

The research significance of library readers' biographical literature reading behavior lies in its ability to reveal insights about reader preferences, motivations, and the impact of biographical narratives on individual identity and learning. Studying these behaviors can help librarians and researchers identify trends in reading habits, the role of biographies in shaping cultural awareness, and their influence on empathy and social understanding. This research can also inform educational initiatives promoting literacy and critical thinking skills through engaging with real-life stories that resonate with readers. This study's findings augment existing literature in library sciences and provide a framework for future research in related fields. By employing rigorous methodologies to analyze borrowing patterns, the study offers a model that can be replicated in other academic libraries, enhancing the broader understanding of user engagement in diverse contexts. The insights gained can inform curricular development, as educators can better align reading materials with student interests and psychological profiles. This alignment can improve student engagement and success by connecting classroom learning with the informal reading choices of students.

2. Previous Research

Higher education students encounter many challenges that significantly impact their academic performance and well-being. These challenges include the pressures of coursework deadlines, the complexities of group projects, financial strains, and the demands of exams, which require effective time management and sustained focus. As students navigate these pressures over time, they often experience cognitive, emotional, and physical exhaustion. This cumulative stress can manifest as study anxiety, fatigue, and burnout, hindering their academic success. In certain countries, additional hurdles complicate the educational landscape for students. Transportation barriers may limit access to campuses, while limited access to technology, especially pertinent in regions struggling with digital infrastructure, can hinder students' ability to engage with online resources and coursework. Poor housing conditions further exacerbate stress, and many students also face adjustment difficulties as they transition into the higher education environment, which can be markedly different from their previous educational experiences. Collaboration on assignments can be a double-edged sword: while it often creates opportunities for enjoyable teamwork and shared learning experiences, it can also lead to interpersonal conflicts. These conflicts may stem from differing work ethics, communication styles, and personality clashes, ultimately impacting the quality of the collaborative effort [11]. Research has shown that mental traits – specifically the Big Five personality traits, including openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism – play a crucial role in influencing behavior. Individuals' ability to process social information can vary widely, leading to differences in social life experiences among peers.

The concept of social contagion highlights how behaviors and ideas can spread within social networks, suggesting that the transmission of attitudes or actions is influenced by the social distance between individuals [12]. Social relationships are pivotal to both physical and mental well-being. However, the rise of technology and the rapid pace of modern life have contributed to a decline in the quality of these essential relationships. Many individuals report feelings of loneliness and increased social anxiety, a trend that has been particularly pronounced following the COVID-19 pandemic [13]. The pandemic has profoundly altered various aspects of life, work, and social interactions, leading to a re-evaluation of the way people connect and communicate. Before the pandemic, gender inequality was pervasive in higher education, evident in disparities regarding pay, representation in senior academic positions, and

contributions to research authorship. During the pandemic, men and women experienced decreased social interactions within universities; however, the decline was notably more acute among women. This disparity was likely exacerbated by increased caregiving responsibilities that many women faced during lockdowns and the shift to remote learning. Consequently, women reported more significant challenges in juggling work and home life than their male counterparts [14]. This dynamic highlights the compounded difficulties that women in higher education may confront, affecting their academic success and personal well-being during unprecedented times.

Researchers highlight the interplay between narrative, personal experience, and professional development, underscoring the importance of understanding individual stories within broader contexts. Story reading serves as an effective method for enhancing mental health and well-being in schools, leveraging storytelling as a psychotherapeutic technique. Research indicates that story-based interventions contribute to reduced depression symptoms, increased hopeful thinking, and overall social/emotional growth. While not everyone reading stories will become more optimistic, engagement in story-reading activities can improve psychological well-being [15]. In examining career transitions within teacher education and academia, a self-study involving three teacher educators explores the barriers and enablers they face. The study utilizes a descriptive case study approach, emphasizing narrative inquiry and critical friend dynamics to analyze their experiences. Insights gained may resonate with others and inform supportive conditions for career transitions and academic professional development [10].

Researchers invite a critical examination of how organizations create, share, and utilize narratives. They prompt further exploration into who has the authority to write these narratives and whose voices might be marginalized. There is a notable disparity between autobiography and biography in four episodes, highlighting a narrative that promotes the organization's growth and stability through strategies like forgetting, erasing, and remythologizing, particularly after periods of instability. Organizations craft autobiographies, showcasing a self-serving identity for competitive advantage, whereas biographies are composed by researchers aiming for an objective history. Authors of autobiographies are typically officials who do not require extensive archival research [16]. Additionally, biographical psychology integrates leadership theories and assessment tools, bridging developmental, social, applied, and organizational psychology. This field enhances understanding of how individual biographical facts correlate with professional suitability, supporting leadership justification and selection for managerial roles [3].

Reading is a vital education component, influencing various cognitive and social development aspects. Understanding the motivations behind social reading is essential, especially among adolescents, as it is a multidimensional construct encompassing factors such as social interaction, self-development, peer recognition, information acquisition, personal interests, and time killing. According to Li and Wu, these dimensions predict reading and socializing acts differently and can also be tailored to encourage reading among adolescents [17]. Meanwhile, the Cultural Sustenance View of Reading (CSVR) emphasizes the role of a reader's cultural and linguistic background, highlighting that reading is influenced by individual context, experiences, and cognitive processes [18]. This perspective suggests that evaluating students' reading comprehension and engagement should account for cultural factors. Vygotsky's theory underscores the importance of cultural mediation in cognitive development, asserting that biological and cultural elements contribute to higher psychological functions shaped by historical context [19]. This integration of theories suggests that education should bridge these approaches for a more comprehensive learning experience. Additionally, the concept of cultural evolutionary psychology points to the evolution of cognition driven by cultural learning and social interaction, further emphasizing the significance of imitation in cognitive development [20]. Independent reading creates numerous benefits, including improved motivation, vocabulary, and overall academic success, reinforcing its foundational role in education [21]. Educators can enhance literacy and language skills by fostering a love for reading and incorporating discussions about literature.

In recent years, the landscape of public reading has undergone significant transformation due to technological advancements and societal changes. These transformations have particularly impacted children and adolescents, leading to a notable decline in reading enjoyment, as evidenced by various international and national surveys. A prominent concern within this discourse is the role of smartphones and social media, which adolescents increasingly favor over traditional print reading. Despite the availability of e-books through public libraries, many young individuals remain under-informed about locating and utilizing these resources effectively [22]. The shift from paper-based to digital reading practices may have profound implications for reading engagement, as increased screen time often fosters shallow reading habits. This tendency could hinder the ability to engage deeply with literary texts, ultimately undermining motivation for slower, more thoughtful reading experiences. Research indicates that frequent reading of shorter texts on screens might correlate with a diminished willingness to invest the necessary cognitive effort for more extended readings or to reflect on their deeper meanings [23]. As we investigate these trends, it becomes crucial to understand their implications for the future of reading and literacy among younger populations.

The existing literature investigating the interplay between psychological flexibility, occupational stress, and biographic popularity in university settings is constrained by several methodological limitations. A predominant issue is the reliance on homogeneous samples, often restricted to specific demographic cohorts, such as age, gender, or academic major. This limitation undermines the generalizability of findings to the broader university populace. Additionally, many studies employ cross-sectional designs, capturing data at a singular point in time. This methodological approach constrains the ability to infer causal

relationships among psychological flexibility, occupational stress, and biographic popularity. Moreover, a significant portion of previous research utilizes self-reported measures for evaluating psychological flexibility and stress levels. This dependency may introduce biases, as participants could underreport or inflate their experiences based on various psychological or social pressures.

The constructs of psychological flexibility and occupational stress are frequently inadequately defined or operationalized, leading to ambiguity regarding their impact on biographic popularity. Another limitation is the tendency of prior studies to overlook contextual factors, including cultural or environmental influences on campus, that might mediate or moderate the relationships among the primary variables of interest. Additionally, existing research often prioritizes immediate psychological effects without consideration of the long-term implications of psychological flexibility and occupational stress on biographic popularity over time. Addressing these methodological limitations in future studies is crucial for enhancing our understanding of how psychological flexibility and occupational stress influence biographic popularity within university contexts.

In response to the limitations identified in prior research, this study implements several methodological enhancements to investigate the interplay of psychological flexibility, occupational stress, and biographic popularity on university campuses. This research employs a large, diverse sample of 1,606 participants from various demographic backgrounds to enhance the generalizability of findings. By incorporating individuals from multiple age groups, genders, and academic majors, the research aims to provide a comprehensive understanding of the interactions among these variables across a broader university population, moving beyond the confines of a homogenous group. Instead of a cross-sectional approach, this study leverages longitudinal data by analyzing book borrowing records from 2014 to 2023. This design facilitates observing changes over time, enabling more robust inferences regarding causal relationships between psychological flexibility, occupational stress, and biographic popularity. Integrating extensive borrowing data—comprising 195,282 entries and a specific focus on 11,778 books, including a pertinent subset of 679 biographical titles—reduces reliance on self-reported measures, thereby minimizing biases associated with participant self-assessment.

The study provides comprehensive definitions and operationalizations of psychological flexibility and occupational stress, ensuring clarity in assessing their impacts on biographic popularity. Unlike prior studies, this research explicitly considers contextual factors that may influence the relationships among the key variables, analyzing cultural and environmental influences on campus to identify potential mediating or moderating effects. To address the typical oversight of long-term implications, the study will examine how psychological flexibility and occupational stress influence biographic popularity over time. The research seeks to identify trends and enduring effects using historical data instead of immediate psychological outcomes. The utilization of SPSS and SPSS Modeler for data analysis affords the application of advanced statistical methods, facilitating the exploration of complex relationships and interactions among the variables of interest. By addressing the methodological limitations identified in previous research, this study aspires not only to contribute valuable insights to the existing literature but also to offer a nuanced understanding of the dynamic interplay between psychological flexibility, occupational stress, and biographic popularity within the context of higher education.

3. Date and Method

The study involved retrieving 679 distinct biographical books, classified under Chinese Library Classification K81, from the library management system from 2014 to 2023. Researchers identified the reader identification numbers associated with these borrowed biographies and conducted a comprehensive analysis of the borrowing records for these readers over the previous decade. This extensive dataset serves as the foundation for the analysis. The sample consists of data collected from the Nanjing Normal University Library between 2014 and 2023. It includes records from 1,606 readers, contributing to 195,282 book borrowing transactions. Within this dataset, 11,778 books were borrowed, with 679 categorized specifically as biographical books. This comprehensive dataset is valuable for analyzing reading patterns, preferences, and trends among university students and researchers. Employing statistical tools such as SPSS and SPSS Modeler indicates a structured approach to data analysis, which can help uncover important insights related to book borrowing behavior in an academic setting.

3.1. Subject Word Frequency

A total of 679 biographical books were loaned for examination. Data for a comprehensive analysis of bibliographic themes was extracted using the CNMARC and UNIMARC 6XX fields. An Excel pivot table was then used to generate statistical insights into the frequency of topic-related terms. Finally, the resulting word frequency table was imported to create a thematic word cloud representation.

3.2. Two-Step Cluster

Navigate to the Analyze menu in SPSS, select Classify, and then choose Two-step Cluster Analysis. Within this framework, designate Gender, Education Background (with categories defined as Undergraduate 1, Graduate 2, and Teacher 3), and Department as categorical variables. Additionally, specify Total Borrowings as a continuous variable. For the distance measurement, employ Log-likelihood and proceed by selecting the OK option to execute the analysis.

3.3. Apriori and Sequence Analysis

To establish an Apriori analysis model in SPSS Modeler, initiate the process by utilizing the Source node to import the Excel dataset. Employing the Type node to ensure that the data types are appropriately verified is essential. Subsequently, designate all book categories (A to Z) as tag variables, assigning them an arbitrary role. The data source should then be connected to the Apriori

node, where specific parameters must be configured, including a minimum support percentage of 50% and a minimum confidence percentage of 90%. Upon completing the configuration, execute the model by right-clicking on the Apriori node and selecting the Run option.

In the case of establishing a Sequence Analysis model, the process similarly begins with the Source node to import the Excel dataset. Verification of data types must again be undertaken using the Type node. The Sequence node must be employed next, with the data source connected accordingly. For this analysis, the reader registration number will serve as the record identification, the year of borrowing books will be designated as the time field, and the book category will function as the content field. Parameters are to be set with a minimum support percentage of 60% and a minimum confidence percentage of 60%. Select Expert mode for enhanced configuration options. Finally, after completing all necessary settings, execute the model by right-clicking on the Sequence node and selecting the Run option.

3.4. Factor Analysis

In conducting the factor analysis, the researcher utilized the SPSS by navigating to Analyze, followed by Dimension Reduction, and then selecting Factor. The book categories A to Z were designated as the variable, where the value assigned to each category corresponded to book borrowings. Within the Description options, the researcher opted for the initial solution, coefficient, Kaiser-Meyer-Olkin (KMO) measure, and Bartlett's test of sphericity. Under the Extract options, the researcher selected the unrotated factor solution with eigenvalues greater than one. The Varimax technique was employed for the rotation method. Additionally, the researcher saved the factor scores for subsequent use in linear regression analyses.

The KMO value for the male group was determined to be 0.705, indicating a satisfactory level of sampling adequacy, as values exceeding 0.70 are typically deemed acceptable for factor analysis. The chi-square statistic yielded a value of 2285.253, which was significant ($p < 0.001$), implying that the correlation matrix is not an identity matrix and suggesting the presence of underlying factors within the data. Conversely, the KMO value assessed for the female group was 0.668, which, while acceptable, falls slightly below the suggested threshold of 0.70. This result suggests that the data remains applicable for factor analysis, albeit on the margin concerning sampling adequacy. The chi-square statistic for the female group was 2922.894, also significant ($p < 0.001$), further supporting the notion that the correlations present are robust enough to imply the existence of latent factors.

3.5. Linear Regression

A logarithmic transformation of readers' total borrowings was conducted to satisfy the assumptions of normality. This transformation was performed in SPSS by selecting the Transform option and choosing Compute Variable. Using the logarithm function, a new column named LogTotal was created, with the original data column (Total) included in the calculation. The researcher utilized the Analyze, Regression, and Linear options in SPSS for the linear regression analysis. The transformed variable, LogTotal, was designated as the dependent variable, while the factor scores obtained from the factor analysis (F1, F2, and F3) served as the independent variables in the regression model. The Enter method was selected, and the reader registration number was used as the case label

3.6. ROC Curve

A total of 1,606 readers were analyzed using Receiver Operating Characteristic (ROC) analysis to assess the efficacy of a binary classification model. This analysis examines the trade-offs between true and false positive rates across various threshold values. The Area Under the Curve (AUC) serves as a pivotal metric summarizing the model's overall performance. The total number of years readers borrowed biographical books from 2014 to 2023 was recorded, assigning a value of 1 for male readers and 2 for female readers, with teachers coded as 1 and non-teachers as 2. To execute the ROC analysis within SPSS, the researcher selected Analyze and then ROC Curve. The Active Years were designated as the Test Variable, and Gender/Background served as the State Variable, with the State Variable set to a value of 1 before proceeding with the analysis.

4. Result

4.1. Subjects of Biographical Books

Biographical books encompass a wide range of themes and subjects, often delving into the lives and contributions of various individuals across history. The most popular biographical topics in the library of Nanjing Normal University are shown in Figure 1.

Diverse Personalities: Biographical literature often profiles famous persons, including historical figures such as scientists, artists, musicians, and politicians. This diversity showcases the richness of human achievement across different fields, such as philosophy, medicine, engineering, education, and sociology.

Cultural Exploration: These books may explore themes through the lens of cultural backgrounds, focusing on figures from countries like China, America, Russia, Germany, Italy, France, and Britain. This geographical categorization can highlight how the background of individuals influences their work and legacy.

Historical Context: Many biographies situate their subjects within significant periods, such as the 20th century, Modern Times, and the Middle Ages. This contextual setting helps readers understand the societal influences and historical events, such as World War II that shaped these individuals.

Achievements and Recognition: The narrative often includes discussions of notable accolades, such as the Nobel Prize and The Academy Award, celebrating the accomplishments of figures who have made significant contributions to their respective fields.

Personal Journeys: Many biographical accounts focus on individuals' personal life stories, providing insights into their

family backgrounds, formative experiences, and the challenges they faced, such as being a female leader in a male-dominated field or a foreigner navigating a new culture.

Exploring Professions: Biographies can shed light on various professions and their societal impact. They portray scientists, artists, educators, politicians, and military personnel and discuss their roles and influences in shaping contemporary society.

Intellectual Contributions: The works often assess the intellectual legacies of thinkers, philosophers, and scholars and include critical reflections on their theories, such as discussions on Fermat's last theorem or developments in psychology, mathematics, and chemistry.

Literary Forms: Biographical books may also vary in style, encompassing autobiographies, memoirs, and character commentaries, allowing for multiple perspectives on the subject's life and character.

Diversity of Experience: Themes may also explore various experiences, such as those of women, elite athletes, and explorers, highlighting diverse paths and contributions throughout history.

Figure 1: Subject Word Cloud Map

4.2. Clusters of Biographical Book Readers

The borrowing records from the library of Nanjing Normal University provide insight into the demographics and behaviors of its readers, which can be classified into three distinct categories. As shown in Figure 2, the first category consists of female graduate students from the School of Literature, accounting for approximately 25.2% of the total readership. This group has a total borrowing volume of 13.1. The second category includes male readers, primarily from the School of Literature, who comprise 28.1% of the readers, with a significantly higher total borrowing volume of 19.23. The third category is the most substantial, comprising 45.8% of the total readership. This group includes female readers from various faculties and departments exhibiting diverse educational backgrounds. However, their total borrowing volume is relatively lower at 11.82.

Analyzing these borrowing patterns reveals a notable gender difference among the readers. The higher borrowing volume among male graduate students suggests differing reading habits or resource needs shaped by their academic focus. Moreover, the proportion of female readers from various disciplines in the third category indicates that library resources are utilized beyond the School of Literature. Despite this diversity, the lower borrowing volume in this group might imply less frequent or lower volume borrowing behaviors. When examining borrowing volumes relative to the number of readers in each category, it becomes evident that although the third group represents the most significant portion of readers, their engagement with library resources may be less intensive compared to the more focused groups from the School of Literature. In conclusion, this analysis highlights varied engagement with library resources based on gender and educational background, with clear distinctions in borrowing volumes that reflect differing academic needs and reading habits among these groups. Further research could explore the specific materials borrowed by each category to enhance understanding of these trends.

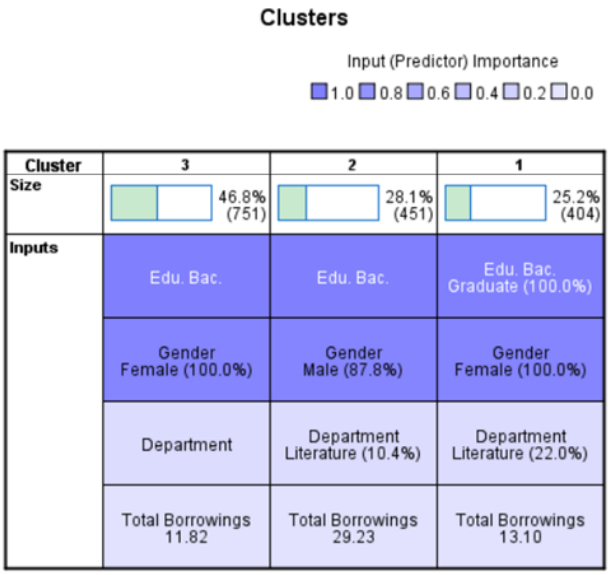

Figure 2: Description of Clustering Results

4.3. Association Rules for Borrowing Books

4.3.1. Apriori Analysis

Table 1 presents the results of the Apriori analysis, which is broken down by gender (female and male). Both genders show a prominent association of I with combinations that include K, but the females exhibit higher support and confidence levels across more diverse combinations.

For Female Analysis: The highest support percentage (75.537%) is seen in the association between I and K, B, indicating a strong co-occurrence of these items among females. The highest confidence (97.516%) is seen for the item set I given K, H and B, suggesting that if K, H and B are present, I is nearly certain to be present. The combinations that involve K seem prevalent, often resulting in high support and confidence values across the analyzed attributes. The values suggest that K plays a crucial role in determining the occurrence of I when paired with other items.

For Male Analysis: The highest support percentage (71.717%) appears with the pair I and K, B, similar to females, indicating a common trend across genders. The highest confidence (90.845%) is associated with I given K, B, showing a strong predictive relationship. The associations for males are generally lower in support and confidence than females, which might indicate a lesser degree of certainty when predicting I based on the given antecedents. Like females, K is a consistent element in achieving high support and confidence.

The results suggest that while there are strong item associations in both groups, females present a more robust predictive framework for the occurrence of I based on the analyzed antecedents. This analysis indicates that K is a central element in determining the occurrence of I for both males and females but with varying degrees of certainty between the genders.

	Consequent	Antecedent	Instances	Support percentage	Confidence percentage
Female	I	K, H and B	644	53.223	97.516
	I	**K, H**	**747**	**61.736**	**97.055**
	I	**K, G and B**	**644**	**53.223**	**95.497**
	I	K, C	605	50	94.215
	I	**K, B**	**914**	**75.537**	**93.764**
	I	K, G	761	62.893	92.773
Male	**I**	**K, B**	**284**	**71.717**	**90.845**
	I	**K, G and B**	**218**	**55.051**	**90.826**
	I	**K, H**	**223**	**56.313**	**90.135**

Table 1: Association Rules

4.3.2. Sequence Analysis

Table 2 consists of two segments: one for females and one for males, focusing on sequence analysis. Each segment presents various sequences of items (denoted as A, B, I, K, etc.), and includes information about support and confidence percentages. Both males and females show that the presence of I or K significantly influences outcomes.

For Female Analysis: The most common consequent is I, associated with high support (89.339%) and confidence percentages across several combinations, indicating it is a prevalent outcome. The combination of B and I shows strong support (67.521%) and high confidence (85.679%), suggesting a strong relationship between B and I leading to outcome I. I and K also hold significant support (84.959%) and confidence (80.35%). This indicates a strong association between variables I and K. The only combination with 100% support is K where all instances support this consequent. This indicates that whenever K is present, it always leads to I. Generally, combinations including I demonstrate higher support and confidence percentages, suggesting I is a central theme in the female dataset. There is a notable drop in confidence when the combinations don't include I, highlighting its pivotal role.

For Male Analysis: K is consistently present in the highest support (100% for K alone), showing its reliability as a consequence within these sequences. The combinations I and K and B and K show significant support percentages (around 77%), marking them as important patterns in male behavior or profiles. Like in the female analysis, B appears with K leading to a fair number of instances (227) with support (71.717%) and confidence (79.93%). This implies a frequent relationship between B and K. I appears frequently but with lower confidence percentages compared to B and K, indicating its inclusion is beneficial yet not as strong as B's relationship with K. A significant finding in the male dataset is the reliability of K as a consequent. Most combinations with K show strong association metrics implying a common link to other variables. Confidence levels drop for combinations not involving K, suggesting its importance as a genetic or behavioral element in the male datasets.

The female dataset shows nuanced interactions, particularly with I as a key consequence, whereas in males, K appears as more dominant overall. Male relations emphasize K more prominently, while females display a more extensive variety of interactions around I. In both datasets, combining multiple antecedents tends to yield better support and confidence levels. This suggests that more complex interactions lead to more predictable outcomes. These analyses suggest a complex interplay of variables where specific antecedents lead to substantial, predictable consequences, mainly reflecting gender-specific differences in the sequences. Understanding these relationships can be useful for tailoring strategies or interventions based on the patterns observed in each dataset.

	Consequent	Antecedent	Instances	Support percentage	Confidence percentage
Female	B and I	I	700	67.521	85.679
	B and I and K	I	635	61.322	85.58
	H	I	631	61.736	84.471
	I	I	913	89.339	84.459
	I and K	I	826	84.959	80.35
	B	I	733	75.537	80.197
	B and K	I	660	68.182	80
	I	K	854	89.339	79.001
	B and I	K	637	67.521	77.968
	B	K	691	75.537	75.602
	I > I	I	675	75.455	73.932
	K	I	881	100	72.81
	I > K	I	612	70.579	71.663
	I and K	K	719	84.959	69.942
	B	B	613	75.537	67.068
	I	B	713	89.339	65.957
	K	K	791	100	65.372
	I and K	B	622	84.959	60.506

Male	B	K	227	71.717	79.93
	B and K	K	201	64.141	79.134
	I	K	254	83.081	77.204
	B	I	218	71.717	76.761
	I	I	244	83.081	74.164
	I and K	I	224	77.02	73.443
	I and K	K	223	77.02	73.115
	B	B	198	71.717	69.718
	K	K	270	100	68.182
	K	I	258	100	65.152
	I	B	210	83.081	63.83

Table 2: Association Rules in Sequence Analysis

4.4. Factor Analysis

4.4.1. Latent Variables for Females

Factor analysis is foundational in understanding the relationship between various variables and their underlying structures. Analyzing the significance of each factor, its practical implications, and how it can be applied in the relevant field of study can yield further insights.

There are two components identified for females. In Table 3, each letter (C, G, D, I, H, K) represents a different book category, and the corresponding numbers indicate their loadings on the two components. A higher loading generally suggests a stronger relationship with the component. F1 reflects the connection between psychological factors and the reading of sociology, culture, education, and politics, named "Sociocultural Engagement." F2 captures how psychological factors influence the reading of literature, linguistics, biography, and history, called "Narrative Exploration."

	Component	
	1	**2**
C (Sociology)	**0.777**	0.090
G (Culture and Education)	**0.683**	0.184
D (Politics)	**0.584**	0.181
I (Literature)	0.082	**0.711**
H (Linguistics)	0.026	**0.594**
K (History including Biography)	0.258	**0.585**

Table 3: Factors that Affect Females

The SPSS AMOS output Figure 3 presents several important metrics related to a structural equation model (SEM), showcasing the relationships between latent variables (F1 and F2) and their indicators (C, D, G, H, I, K). standardized regression weights indicate the strength and direction of relationships between latent variables and their observed indicators. C (0.749) and D (0.686) show strong positive relationships with F1, indicating that these variables are strongly predicted by the latent factor F1. G (0.507) has a moderate positive relationship, suggesting it is less influenced by F1 than C and D. H (0.243) has a weak positive relationship with F2, suggesting a minimal influence. I (0.455) and K (0.705) indicate moderate to strong relationships with F2, particularly K, which suggests it significantly contributes to understanding F2. Squared multiple correlations indicate the proportion of variance that the latent variables explain in the observed indicators: K (0.497) has nearly half of its variance explained by the factors in the model, indicating it is a substantial measure. I (0.207) and G (0.257) show moderate variance explanation. H (0.059) has the lowest, indicating that it contributes the least in the context of this model.

The covariance between F1 and F2 (23.384) demonstrates a significant relationship between these two latent constructs, which is confirmed by a high critical ratio (C.R. = 5.470), suggesting these factors are likely correlated. The correlation estimates of 0.537 between F2 and F1 suggest a moderate positive correlation, meaning that as one factor increases, the other also tends to increase. The results suggest that both F1 and F2 significantly influence their respective indicators, with F1 having a notably more substantial effect on C and D. The positive covariance and correlation further imply that F1 and F2 are related constructs. However, caution should be exercised regarding the varying strength of influence, especially on H, which appears less connected within the model.

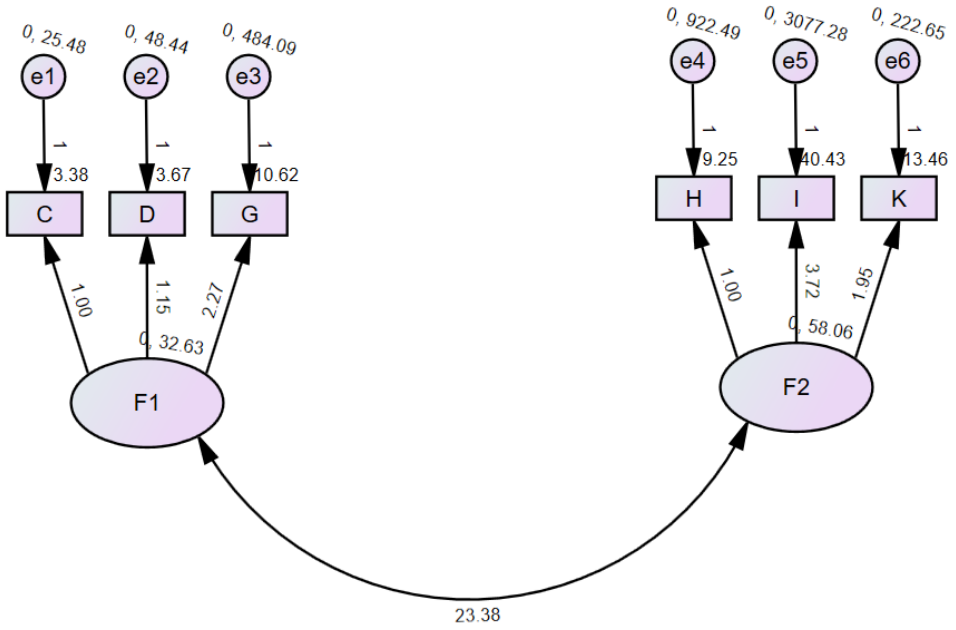

Figure 3: Factor Structure of Females

4.4.2. Latent Variables for Males

There are three components identified for males. Like the female group, each letter corresponds to a different book category. Table 4 indicates the loadings of various components (presumably factors); some values indicate negative loadings, suggesting an inverse relationship with those components. F1 reflects the psychological factors that influence male readers' interests in various subjects like society, economics, theory of science, culture and education, and philosophy, named "Motivational Drivers." F2 reflects the psychological factors that influence male readers' interests in reading literature, biographical history, comprehensive, and art books, named "Literary and Artistic Perception." F3 reflects the psychological factors that influence male readers' interests in reading aviation, Astro earth, mathematics, physics and chemistry, and technology books, named "Scientific and Technical Interest." The distinction in the number of components between genders (2 for females and 3 for males) may suggest different underlying structures in the data for each gender, indicating that the traits measured may function differently by sex. Figure 4 displays the results from the SPSS AMOS output.

	Component		
	1	**2**	**3**
C (Sociology)	**0.867**	-0.060	-0.047
F (Economics)	**0.813**	-0.185	0.038
N (Theory of Science)	**0.677**	0.102	0.161
G (Culture and Education)	**0.660**	0.301	0.020
B (Philosophy)	**0.648**	0.438	-0.039
I (Literature)	0.045	**0.705**	-0.057
K (History including Biography)	0.117	**0.675**	0.110
Z (Comprehensive)	0.081	**0.650**	0.119
J (Art)	-0.001	**0.616**	-0.088
V (Aviation)	-0.063	0.078	**0.773**
P (Astro Earth)	-0.052	-0.018	**0.726**
O (Mathematics, Physics, and Chemistry)	0.250	0.043	**0.609**
T (Technology)	0.245	-0.063	**0.554**

Table 4: Factors that Affect Males

The standardized regression weights indicate the strength and direction of the relationships between latent variables (F1, F2, F3) and observed variables (C, F, N, G, B, I, K, Z, J, V, P, O, T). The estimates range from 0.411 (J) to 0.889 (C), which suggests varying degrees of influence of the latent factors on the observed variables. F1 has the strongest influence on C (0.889) and a relatively robust

influence on F (0.766) and B (0.629). F2 most strongly influences K (0.718) and moderately affects I (0.527) and Z (0.593). F3 has a strong influence on both V (0.635) and P (0.655) but a weaker effect on O (0.430) and T (0.508). C (0.791) has the highest R^2, indicating that a significant portion of its variance is explained by the model. F (0.586) and K (0.516) also show substantial explained variance, while variables like J (0.169) and O (0.185) explain less variance, suggesting that other factors may influence them more significantly.

The significant covariance ($p < 0.001$) between F1 and F2 (291.008) indicates a strong association, suggesting these factors share a considerable amount of variance. The covariance between F2 and F3 is less significant (1.413, $p = 0.158$), and the covariance between F1 and F3 (0.487) has a p-value close to significance (0.066), suggesting a potential but weaker relationship. The correlation between F1 and F2 (0.242) suggests a moderate positive relationship. The low correlation between F2 and F3 (0.107) indicates a weak relationship. The correlation between F1 and F3 (0.123) also shows a weak positive relationship.

The SEM model shows significant relationships among the latent variables and observed measures, notably between F1 and F2. The standardized regression weights and squared multiple correlations suggest that the model explains a substantial amount of variance in key outcomes, particularly for C. Areas for further investigation might include the relationships with weaker correlations and covariances, as these may signal other influencing factors or a need for model refinement. Further analysis could also involve checking fit indices to evaluate the overall model fit.

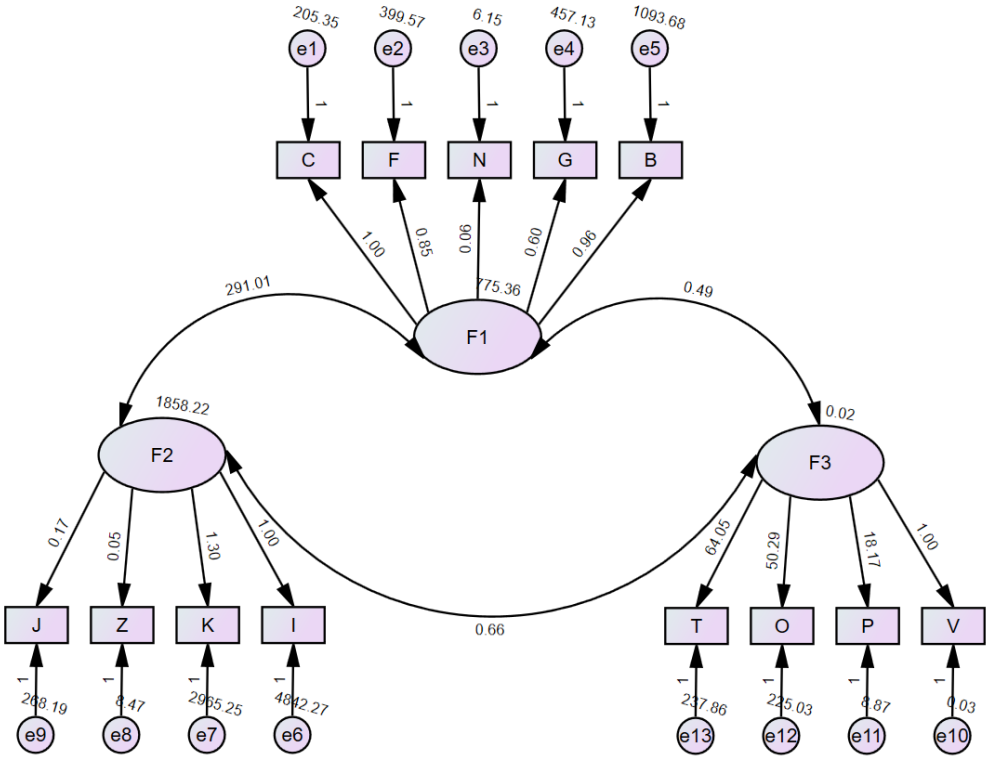

Figure 4: Factor Structure of Males

4.5. Linear Regression

4.5.1. Borrowings Prediction for Females

The correlation coefficient R is 0.660, indicating a moderate to strong positive correlation between the predictors and the dependent variable. The R Square value of 0.436 means that the model can explain approximately 43.6% of the variance in LogTotal. This indicates that the model has a reasonable fit. The Adjusted R Square value of 0.435, which is very close to R Square, suggests that the model is not overfitting and remains robust when accounting for the number of predictors. Though the Standard Error of the Estimate value is noted as 0.38506, it is typically used to gauge the accuracy of predictions made by the model. The Durbin-Watson value of 1.683 suggests that there may be some positive autocorrelation in the residuals. However, it is not alarming as it is within a reasonable range (1.5 - 2.5 is generally acceptable). The regression model is statistically significant, with an F-value of 466.317 and a p-value (Sig.) 0.000. This indicates that the independent variables (F1 and F2) significantly improve the prediction of LogTotal as compared to a model with no predictors. Figure 5 displays the normality of the dependent variable and regression standardized residual in the female model.

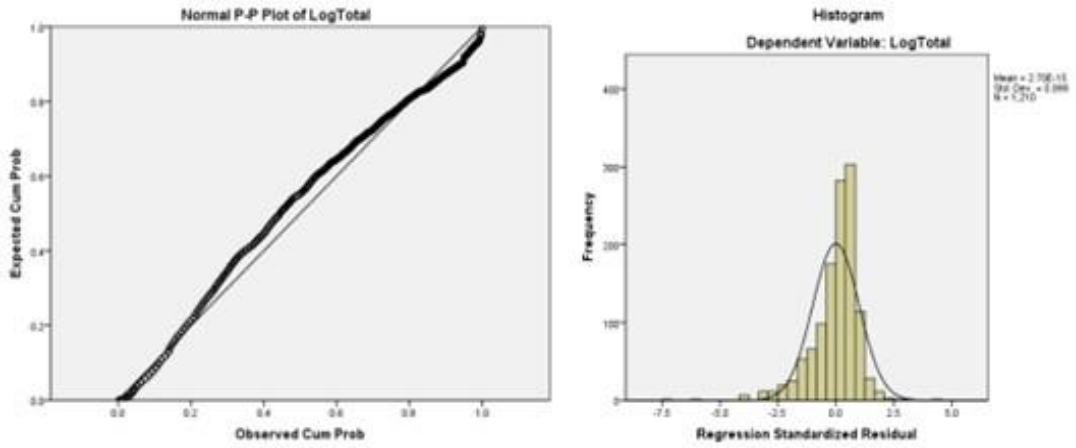

Figure 5: Normality of Dependent Variable and Regression Standardized Residual in the Female Model

Table 5 shows the linear regression coefficients. The intercept (B) is 1.809, representing the total's expected log value when both F1 and F2 are zero. The coefficient value of F1 is 0.185. This indicates that for each unit increase in F1, LogTotal increases by 0.185 units, holding F2 constant. The standardized coefficient (Beta) of 0.361 suggests that F1 moderately affects LogTotal relative to F2. The coefficient value of F1 is 0.283. For each unit increase in F2, LogTotal increases by 0.283 units, holding F1 constant. The standardized coefficient (Beta) of 0.553 indicates that F2 has a more substantial relative impact on LogTotal than F1. Both predictors have p-values of 0.000, indicating their effects are statistically significant. The linear regression analysis reveals that both F1 and F2 are significant predictors of LogTotal for female readers. F2 has a more significant impact than F1, and the overall model explains a considerable portion of the variance in the dependent variable. Therefore, enhancing both predictors could lead to improvements in LogTotal for this demographic.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.809	0.011		163.412	0.000
	F1	0.185	0.011	0.361	16.685	0.000
	F2	0.283	0.011	0.553	25.578	0.000

a. Dependent Variable: LogTotal

Table 5: Coefficients in Female Model[a]

4.5.2. Borrowings Prediction for Males

The model shows an R value of 0.629, indicating a moderate correlation between the predictors and the dependent variable. The R^2 value of 0.396 suggests that the model can explain approximately 39.6% of the variance in LogTotal, implying that the predictors have a meaningful impact on the outcome. The adjusted R^2 value of 0.391 accounts for the number of predictors in the model, suggesting that the predictors maintain their explanatory power relative to the sample size and number of predictors used. The Durbin-Watson value of 1.657 is close to 2, indicating no significant autocorrelation in the residuals, which is a good sign for the validity of the regression results. The ANOVA table shows a significant F-statistic (85.569) with a p-value of 0.000. indicating that the overall model is statistically significant. This means that at least one of the predictors contributes to explaining LogTotal. The regression sum of squares is 49.979, and the residual sum is 76.320, reflecting a reasonably sized model versus the error. Figure 6 displays the normality of the dependent variable and regression standardized residual in the male model.

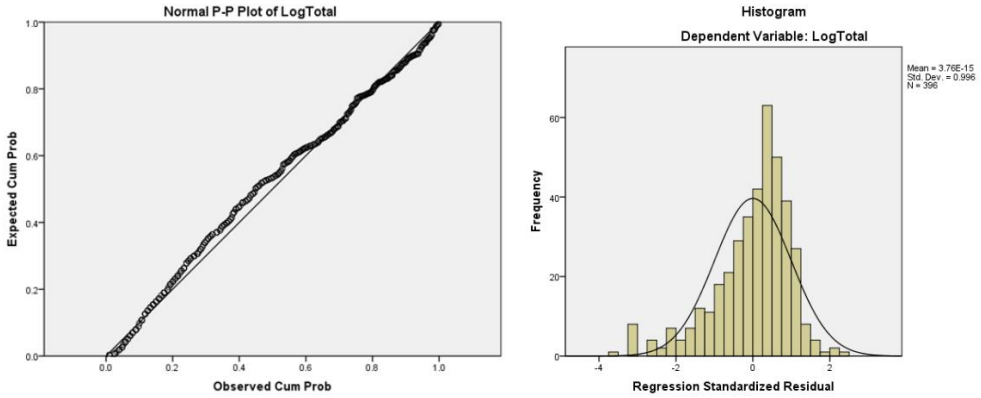

Figure 6: Normality of Dependent Variable and Regression Standardized Residual in the Male Model

Table 6 illustrates the coefficients in linear regression. The intercept (1.878) is significant with a t-value of 84.676 and a p-value of 0.000. suggesting that when all predictors are zero, the LogTotal is approximately 1.878. The unstandardized coefficient of F1 (0.170) is statistically significant (p = 0.000) with a standardized coefficient (Beta) of 0.301, indicating a moderate positive relationship between F1 and LogTotal. This means that for every unit increase in F1, LogTotal increases by approximately 0.170, holding other variables constant. The unstandardized coefficient for F2 (0.063), with a p-value of 0.005, is also significant but has a more minor impact (Beta = 0.112) than F1. This suggests that F2 positively affects LogTotal but is less influential than F1. The coefficient for F3 (0.262) has the highest standardized effect (Beta = 0.463) and is significant (p = 0.000). This indicates that F3 has a strong positive relationship with LogTotal, meaning that for each unit increase in F3, LogTotal increases by 0.262, compared to other predictors. The regression analysis indicates that the three factors (F1, F2, and F3) significantly contribute to predicting LogTotal for male readers, with F3 having the most significant impact followed by F1 and F2. The model is statistically significant and explains a substantial portion of the variance in the outcome variable.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	1.878	0.022		84.676	0.000
	F1	0.170	0.023	0.301	7.416	0.000
	F2	0.063	0.022	0.112	2.821	0.005
	F3	0.262	0.023	0.463	11.468	0.000

a. Dependent Variable: LogTotal

Table 6: Coefficients in Male Model[a]

4.6. ROC Curve Analysis

4.6.1. Teacher Group

In ROC curve analysis, the University Teacher group shows significantly better active years performance distinguishing between classes than the Male group, as indicated by the area under the curve (AUC) values in Figure 7 and the significance of the results. AUC values range between 0 and 1, where 0.5 indicates no discrimination and values closer to 1 indicate better discrimination capability.

This AUC value of 0.690 indicates a moderate level of discriminative ability. It suggests that the model can correctly distinguish between positive and negative classes better than random chance, but there is still room for improvement. The standard error is 0.034, reflecting a reasonable precision level for this AUC estimation. The very low p-value (0.000) indicates that the AUC is statistically significant, providing strong evidence that the model can discriminate between classes. The confidence interval for Teaching Staff shows we can be 95% confident that the true AUC lies within this range. Both bounds (Lower bound 0.623, Upper bound 0.757) above 0.5 suggest a strong model performance.

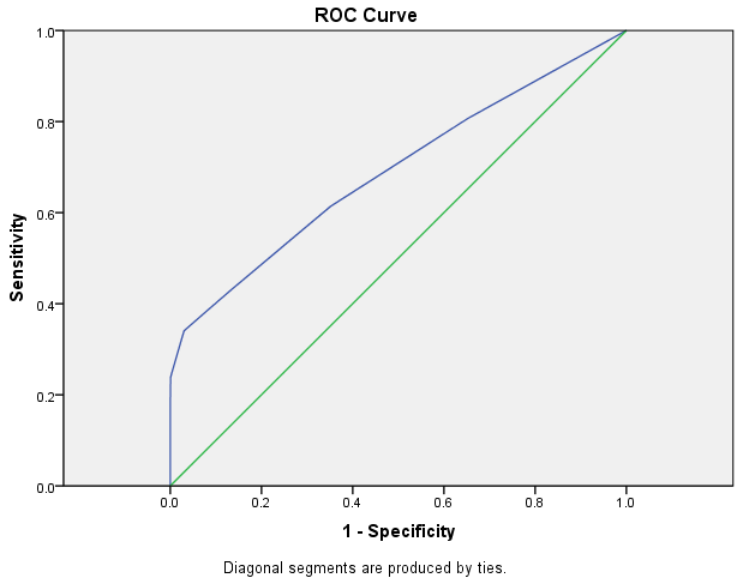

Figure 7: ROC Curve for the Teacher Group

4.6.2. Male Group

Figure 8 displays the active year's performance of the male group. The AUC value of 0.535 suggests that the model's ability to distinguish between the positive and negative classes is slightly better than random chance (which would be an AUC of 0.5). An AUC of 0.535 is considered to indicate very weak discriminative ability. The standard error is 0.017, reflecting a reasonable precision level for this AUC estimation. The smaller the standard error, the more reliable the AUC estimate. This p-value of 0.037 indicates that the AUC is statistically significant ($p<0.05$), suggesting that the model has some weak predictive ability. The lower bound of the 95% confidence interval is 0.501, and the upper bound is 0.568. Given that the lower bound is very close to 0.5, it reinforces the conclusion that the model's predictive ability is marginal.

The model performance for Teacher (AUC = 0.690) is significantly better than that for Male (AUC = 0.535). This implies that the staff's active years metric is a more reliable predictor of the outcome. Both results show statistical significance, but the Teacher's model is stronger and more reliable based on the p-values and confidence intervals. For applications where distinguishing between the two classes is critical, the Teacher model is more effective, while the Male model may require improvements or alternative approaches to enhance predictive capability.

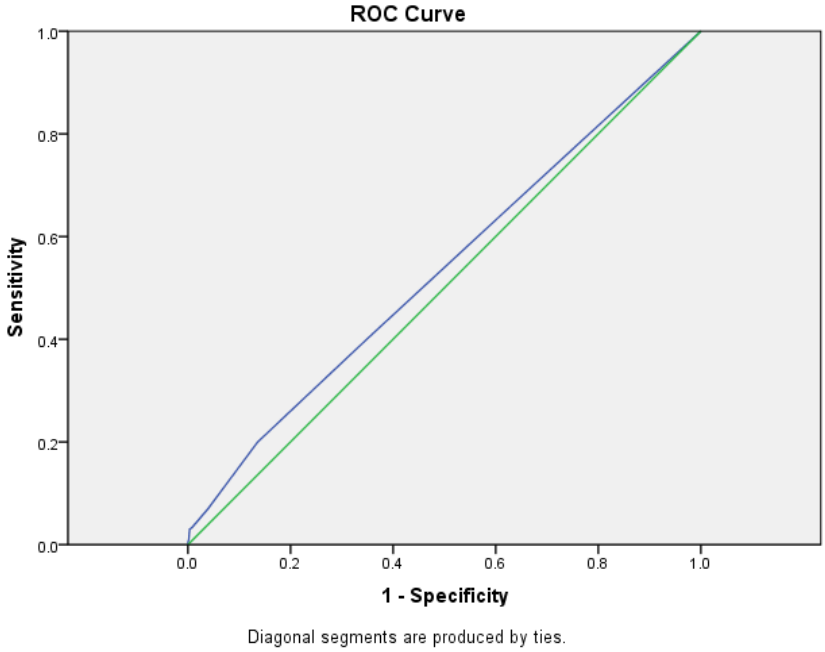

Figure 8: ROC Curve for the Male Group

5. Discussion

5.1. Cross-Loan of Literature, Biography, and Philosophy Books

The concept of cross-pollination between literature, biography, and philosophy is quite compelling, mainly because it highlights how these domains can enrich one another. For instance, literature often serves as a backdrop for philosophical inquiry, revealing moral dilemmas and existential questions within narratives, which can deepen our understanding of philosophical concepts [24]. This intersection is particularly valuable for interpreting authors' works through their biographical contexts, as it provides insights into the influences that shape their creative expressions. Additionally, the notion that biography can bridge personal experiences with broader philosophical discussions is significant. It underscores the idea that individual lives reflect more prominent sociocultural themes, thus serving as a lens through which we can examine historical and intellectual developments. This perspective aligns well with the argument for biography's increased value in academia, especially given the current discourse surrounding its relevance in scholarly settings [25].

For prospective teachers, the simultaneous exploration of literature, biography, and philosophy offers valuable insights into human experiences, critical thinking, and ethical considerations—essential for effective teaching. Literature fosters empathy and understanding of diverse perspectives through storytelling and character exploration, enhancing language skills and creativity. Biographies present real-life examples of individuals who have made significant contributions to society, serving as sources of inspiration and lessons on resilience, leadership, and personal growth that can motivate students. Philosophy, in turn, encourages deep thinking and discussions about morality, education, and the purpose of teaching. It challenges prospective teachers to reflect on their beliefs and values, fostering a more profound commitment to their profession. By engaging with these three genres, teacher candidates can cultivate a well-rounded worldview, better prepare themselves for classroom dynamics, and develop critical pedagogical skills to benefit future students.

The emphasis on the emergence of biography studies as an independent discipline is noteworthy. This shift indicates a growing recognition of biography's importance within historical and philosophical contexts, suggesting that a critical narrative approach can offer valuable insights to academic and general audiences [26]. Such developments are exciting for the future of interdisciplinary research and scholarship. The "many-towers problem" mentioned by Baron further resonates here, suggesting that improving communication and collaboration among disciplines could lead to richer analyses and understandings of literature, biography, and philosophy [27]. By breaking down the barriers that separate these fields, academics can foster a more integrated approach to scholarship that acknowledges the complex interplay between individual narratives and collective human experiences.

5.2. Psychological Flexibility in Reading Adjustment

Psychological flexibility is increasingly recognized as a critical factor in how individuals navigate and adjust their reading habits, especially in challenging environments like university settings. As students encounter various stressors, including academic pressure and career uncertainties, adapting and responding to these challenges becomes essential for maintaining mental health and overall well-being. Research indicates that high levels of occupational stress can negatively impact academic performance and emotional resilience, underscoring the importance of psychological flexibility in coping mechanisms [28]. For students, engaging with reading can effectively manage stress, providing an escape and fostering a deeper connection with both fictional and nonfictional texts. This connection enhances emotional resilience and contributes to a sense of belonging during the often isolating university experience. However, the decline of intrinsic reading motivation over the school years poses a challenge [29]. Those with high psychological flexibility may better sustain their love for reading, allowing them to adapt their reading practices in response to academic pressures.

Moreover, psychological flexibility can empower students to embrace various reading strategies that bolster comprehension and shift the focus from extrinsic motivators to the intrinsic enjoyment of reading. This shift is important, as research shows that intrinsic motivation is a stronger predictor of reading comprehension than extrinsic factors [30]. Therefore, cultivating psychological flexibility within educational settings may enhance reading outcomes and promote academic success in addition to cognitive benefits, reading functions as a unique conduit for social connection, enabling students to engage in meaningful discussions and shared experiences. This social aspect can be particularly valuable in fostering community during university life. Furthermore, the concept of self-regulation of learning (SRL) intertwines with psychological flexibility by allowing students to manage their learning experiences effectively [29]. By enhancing psychological flexibility, educational strategies can contribute to better self-regulation and improved academic performance.

Biographies, in particular, can resonate with students by offering insight into how successful individuals navigated their challenges, serving as sources of inspiration and motivation. The relationship between psychological flexibility and occupational stress may encourage greater interest in reading biographies, as students seek coping mechanisms and new perspectives on their academic journeys. Engaging with life stories can illuminate potential paths forward, providing reassurance and guidance during stressful times.

5.3. Gender Differences in the Mental Structure of Reading

Gender differences in reading habits and competence have been the focus of various studies, highlighting distinct patterns and implications. Research indicates that while girls, on average, tend to read more and exhibit higher reading competence compared to boys, these differences do not necessarily imply that special treatment is needed to enhance reading skills based on gender. Older girls seem to benefit more from increased reading exposure, but this finding is not robust [31]. Avid readers of different

genres also exhibit varying habits; for instance, men are likelier to be avid non-fiction readers and may read less frequently than fiction enthusiasts, who typically utilize libraries more and have a greater borrowing tendency [32]. Moreover, female students prefer print reading, multi-format use, and leisure reading, which positively influence their performance [33]. While boys generally demonstrate lower reading competence relative to girls, they excel in subjects like mathematics, where gender identity impacts their engagement and perceived competence [34,35]. This suggests that boys motivation and beliefs about their abilities are more closely tied to their reading success, potentially influencing their overall effort in reading activities [34]. The studies emphasize how gendered perceptions and motivations affect reading habits and competencies, suggesting that understanding these differences can inform educational approaches.

Sociocultural Engagement (F1) and Narrative Exploration (F2) provide insightful frameworks for analyzing female readers' multidisciplinary book choices and how psychological factors shape their reading experiences. Sociocultural Engagement emphasizes the interplay between psychological factors and the engagement with sociology, culture, education, and politics. In the context of female readers, this can manifest as exploring social roles, gender dynamics, and cultural narratives that resonate with their personal experiences. Women may seek out books that address issues such as empowerment, identity, and societal expectations, ultimately fostering a deeper understanding of their place within larger sociocultural contexts. Women might gravitate towards literature that reflects their struggles or triumphs in various sociocultural domains. Reading sociology or political texts may enhance critical thinking around gender issues, leading to more informed perspectives on societal norms and behaviors. Engaging with diverse cultural narratives allows for a broader view of the world, deepening empathy and understanding across different societies. Narrative Exploration focuses on how psychological factors influence literature, linguistics, biography, and history reading. For female readers, narrative exploration can be deeply personal, as they often relate to characters and historical figures who reflect their journeys or aspirations. Reading narratives—whether fictional or non-fictional—can serve as a means of self-discovery and emotional processing. Female readers may prefer narratives that feature strong, relatable female protagonists or that address universal themes of love, loss, and resilience. Biographies of influential women can inspire and motivate readers by providing role models and showcasing the potential for achievement. Complex narratives stimulate emotional intelligence and foster a deeper understanding of human experiences. The interplay of Sociocultural Engagement and Narrative Exploration illustrates how female readers navigate their book choices through a lens that intertwines their psychological realities with broader sociocultural themes and personal narratives. This multidimensional approach enriches their reading experience and aids in personal growth and understanding of the world around them. By embracing diverse genres, female readers can foster a well-rounded intellectual engagement that empowers and informs their individual and collective identities. While F1 and F2 significantly impact female book borrowing, F2 (Narrative Exploration) has a more significant influence than F1 (Sociocultural Engagement). Emphasizing the narrative aspects of literature alongside understanding the sociocultural context can effectively enhance book borrowing in this demographic. Therefore, initiatives aimed at promoting engaging narratives and addressing sociocultural factors could be beneficial in increasing the number of books borrowed by female readers.

Motivational Drivers (F1), Literary and Artistic Perception (F2), and Scientific and Technical Interest (F3) highlight the multifaceted nature of male readers' interests across different disciplines, shedding light on how psychological factors shape their engagement with various types of literature. Motivational Drivers reflects the psychological motivations that drive male readers to explore subjects like society, economics, the theory of science, culture, education, and philosophy. These topics often appeal to readers interested in understanding complex societal structures and the underlying principles governing human behavior and thought. Such interests may stem from a desire for personal growth, intellectual stimulation, or to engage with contemporary issues. Male readers might be motivated by a quest for knowledge that enhances their ability to navigate and contribute to society, demonstrating a preference for literature that empowers them to think critically and gain insights into their world. In the Literary and Artistic Perception dimension, the focus shifts to literary interests, including literature, biographical history, comprehensive narratives, and art books. Psychological factors may include emotional resonance, aesthetic appreciation, and pursuing narratives that reflect human experiences. Male readers might be drawn to stories that evoke empathy and provide a deeper understanding of individual lives and cultural contexts. Engagement with art and literature can also be seen as a means of personal expression or connecting with broader human experiences. This inclination suggests that male readers may value books that inform, inspire, and challenge their perspectives. The Scientific and Technical Interest aspect delves into the interests of male readers in scientific disciplines, including aviation, earth sciences, mathematics, physics, chemistry, and technology. The psychological factors often relate to curiosity, problem-solving, and a desire for empirical understanding. Male readers in this category may be motivated by a fascination with how the world works, leading them to seek books that provide concrete knowledge or practical applications. This interest points toward a proactive engagement with the sciences—where reading is not just about information, but also about innovation, exploration, and the pursuit of new ideas. The interplay among Motivational Drivers, Literary and Artistic Perception, and Scientific and Technical Interest illustrate a comprehensive landscape of male readers' interests, suggesting that their reading habits are influenced by a combination of practical knowledge, emotional engagement, and critical thinking. This multidimensional approach indicates that male readers do not exist solely within one category of interest but often navigate across them, reflecting broader intellectual pursuits. Understanding this complex interplay can help publishers and educators tailor their offerings to better engage male readers by

recognizing and catering to their diverse motivations for reading across disciplines. The cumulative effects of these factors suggest that male readers are primarily motivated by their interests in scientific and technical topics, closely followed by motivational drivers related to broader societal themes. Literary and artistic perceptions, while still relevant, play a comparatively more minor role. Understanding these dynamics can help libraries and bookstores tailor their offerings to better meet male readers' interests, ultimately promoting more targeted marketing and acquisition strategies.

5.4. Teaching Staff Requirements

The performance of the Teacher model, with an AUC of 0.690, indicates that it has a significantly better predictive capability than the Male model. The statement suggests that the staff's active years metric is a more reliable predictor of the outcome than gender alone. This implies that experience indicators may provide more relevant information regarding the factors influencing the measured outcomes. The findings imply that when evaluating university teaching staff's effectiveness or performance, focusing on their experience and active years in the field may be beneficial rather than demographic factors such as gender.

University teachers tend to be more persistent than students. The teacher's work environment tends to be more stable, allowing for borrowing educational materials for designated periods. However, students typically complete their studies and graduate within three to four years. Teachers often have more experience in academia and understand the challenges students face. This experience can lead to a more remarkable ability to navigate obstacles and face difficulties. Most college teachers are deeply committed to their students' success and education. This intrinsic motivation drives them to continue working hard despite setbacks. Teachers feel a professional obligation to support their students and help them succeed. This sense of responsibility can make them more persistent in providing assistance and mentorship. Teachers often have clear goals for what they want to achieve in their courses, whether it is specific learning outcomes or helping students develop critical thinking skills. This clarity can foster persistence. Teachers often form emotional connections with their students and care about their well-being and future. This emotional investment can drive them to be more persistent in fostering a positive learning environment.

Researchers discuss the experiences and perspectives of pre-service teachers as they transition from students to educators. It emphasizes that it is unrealistic to expect them to be thoroughly professional experts immediately after obtaining their degree, as their future teaching will be influenced by their past experiences in the classroom. Many pre-service teachers report negative memories from their secondary mathematics lessons, which may shape their identification with students during training. Second-year students, in particular, tend to relate more to the pupil's perspective, leading to high agreement with negative experiences. Conversely, third and fourth-year pre-service teachers begin to identify with the idealized image of a competent primary level teacher; however, their traumatic initial teaching experiences may evoke feelings of inadequacy and affect their self-perception. By the end of their studies, these teachers may feel pressure to conform to societal norms of competence and might conceal any feelings of incompetence to maintain a professional identity [35]. Moreover, recent research indicates that pre-service teachers view educational researchers as more knowledgeable but less trustworthy regarding integrity and benevolence than practitioners. As they progress in their training and careers, teachers consider various sources of information, often favoring experiential over scientific sources due to their perceived epistemic trustworthiness. This encompasses expertise, integrity, and benevolence [36].

The interplay between psychological flexibility, occupational stress, and the propensity to read biographies can create a positive feedback loop that supports university teaching staff in managing their professional lives and personal development. University teaching staff often experience high levels of occupational stress due to workload, student expectations, and administrative responsibilities. Engaging in reading, particularly biographies, can serve as an escape or a form of relaxation, helping to mitigate stress effects. For teaching staff, reading is often linked to lifelong learning. Biographies can enrich their understanding of various fields and ideas, which can be inspiring and beneficial in enhancing their teaching and interactions with students. Biographies often detail the struggles and triumphs of individuals, offering valuable lessons. University staff may use these narratives for guidance and motivation to navigate their professional challenges. Biographies often reveal the vulnerabilities and successes of individuals, allowing readers to relate to their journeys. These stories can provide comfort and understanding for university staff dealing with stress. Reading about the lives of successful individuals can inspire university staff to reflect on their careers and personal development, driving them to adopt new strategies and mindsets that enhance their professional lives. Engaging with biographies can foster a sense of community among university staff as they share insights, discussions, and experiences derived from their readings. This can also enhance camaraderie, alleviating feelings of isolation that may accompany occupational stress.

Libraries can organize regular book review sessions or discussions where university teaching staff can share insights from the biographies they have read, focusing on lessons applicable to their teaching practices. Invite authors or experts in education to speak about their work or the impact of notable educators on teaching practices, which could inspire staff in their professional development. Create thematic displays in the library featuring biographies of influential educators or thought leaders in higher education to encourage staff to explore these works. Ensure that digital copies of biographies are available for easy access, encouraging more staff to explore these resources. Implement a way for staff to recommend biographies they find impactful for others to read, creating a community of shared knowledge. Use the library’s social media platforms to highlight new biography acquisitions and share quotes or insights from these texts, sparking interest among teaching staff.

6. Conclusion

By analyzing the borrowing lists of readers alongside their biographical records at Nanjing Normal University Library from 2014 to 2023, the study provides valuable insights into reader patterns and preferences over a substantial period. The research uncovers the social dynamics of reading within the university community by delving into the association rules of book sharing among readers. Understanding how books are shared and recommended among peers can help librarians tailor collections and services that better meet the needs of their patrons. The analysis of time series association rules offers a temporal perspective on borrowing behaviors, allowing library administrators to identify trends and fluctuations in reading habits. This can lead to more informed decision-making regarding collection development, resource allocation, and promotional activities that align with peak reading times or interest surges in specific genres or subjects. By understanding how and why readers engage with biographical literature, libraries can better curate collections, develop targeted programming, and foster a reading culture that supports personal growth and community engagement. Investigating the reading psychological structure of readers contributes to the broader field of reader psychology. Understanding the motivations, preferences, and emotional responses linked to different genres or authors can help educators and librarians craft more engaging reading programs and interventions that resonate with students, ultimately fostering a culture of reading and learning. Utilize ROC curve analysis to create models that predict the likelihood of book borrowing based on gender and educational background. Assess the sensitivity and specificity of these models to determine their effectiveness in forecasting borrowing trends. The analysis intends to explore the predictive validity of these demographic factors in understanding borrowing behaviors and preferences in a public or academic library context.

The study reveals that the biographical collections at Nanjing Normal University are primarily centered around themes related to diverse personalities, cultural exploration, historical context, achievements and recognition, personal journeys, exploration of professions, intellectual contributions, and diversity of experience. The variety in biographical styles, including autobiographies, memoirs, and character commentaries, allows for a multifaceted understanding of individuals' lives. The pronouns I and K exhibit a significant influence on the sequence analysis outcomes for both genders. This suggests that the personal connection and identification with these elements play a crucial role in shaping reader responses and engagement. The analysis identifies two significant components within the reading psychology of female participants: Sociocultural Engagement (F1) and Narrative Exploration (F2). The high covariance between these factors suggests a strong interdependence, with a moderate positive correlation indicating that as one factor increases, so does the other. Additionally, linear regression analysis confirms that both components are significant predictors of reading engagement, with F2 exerting a greater influence than F1 on the overall reading experience measured by LogTotal. In contrast, three components are discerned in the reading psychology of male participants: Motivational Drivers (F1), Literary and Artistic Perception (F2), and Scientific and Technical Interest (F3). A significant covariance between F1 and F2 highlights a robust relationship between these constructs. Although the correlations among F2 and F3, as well as F1 and F3, reveal weaker relationships, the overall regression analysis indicates that all three factors considerably predict reading engagement, with F3 having the most substantial impact. The University Teacher group performs notably more in distinguishing between classes than the Male group. This finding implies that educators may engage with biographical literature more nuancedly, reflecting their professional background and experience in interpreting diverse narratives. The findings indicate that the overall regression models for both genders effectively explain substantial portions of the variance in reading engagement measured by LogTotal, suggesting strong predictive validity of the identified psychological components across both groups. These findings collectively enhance our understanding of the reading psychology associated with biographical literature in the context of gender differences and educational backgrounds, providing valuable insight for future research and practical applications in educational settings.

This study acknowledges several limitations that may impact the interpretation and generalizability of the findings. The study was conducted at Nanjing Normal University and may not have represented the broader population of readers in other academic or public libraries. The university's specific demographic and cultural context may limit the findings' generalizability. Although the study spans a substantial period from 2014 to 2023, changes in reading trends and borrowing behaviors may continue to evolve. The findings may not account for future shifts influenced by technological advancements, societal changes, or emerging genres. The analysis relies on biographical records and borrowing lists, which may not fully capture the motivations and preferences of readers. Self-reported data can be prone to biases, inaccuracies, or social desirability effects, potentially impacting the reliability of the findings. The methodology for discovering association rules may fail to capture the complexity of readers' preferences and interconnections among various genres. Factors such as the influence of peer recommendations or external events may not be adequately represented. Concentrating on biographical collections limits the exploration of broader reading behaviors related to other genres. This may overlook the influences and motivations driving engagement with fiction, nonfiction, and other literary forms. While the study aims to analyze differences based on gender and education, these categories may not encompass the full spectrum of identity factors that influence reading behavior, such as age, cultural background, and socioeconomic status. The ROC curve analysis and predictive models developed may have limitations in terms of complexity and account for only a subset of factors influencing borrowing behavior. Other psychological or sociocultural variables might play a role that was not captured in this study. While the study examines trends over time, it lacks in-depth longitudinal data that could provide insight into how individual reading habits change throughout a reader's academic career or life. The study may not fully account for the emotional

states or contextual influences affecting reader choices and engagement, such as stress, life experiences, or societal events that may impact reading preferences. The psychological components identified in the study may not be static and could change over time or in different contexts. Future research may need to explore the fluidity of these factors more comprehensively. These limitations highlight future research areas and suggest avenues for improving understanding of reader behaviors and preferences in library settings.

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