Journal of Economics and Management Sciences; Vol. 8, No. 3; 2025
ISSN 2576-3008 E-ISSN 2576-3016
https://doi.org/10.30560/jems.v8n3p44

Factors Influencing Secretarial Personnel's Willingness to Remain in the Information Cocoon Based on Push-Pull-Mooring (PPM) Theory

Yixin Zheng[1], Mengxuan Zheng[1], Jianing Zhang[1], Juan Zhu[1] & Huimin Li[1]

[1] Nanchang Normal University of School of Liberal, China

Correspondence: Yixin Zheng, Nanchang Normal University of School of Liberal, Jiangxi, Nanchang, China.

Received: May 12, 2025; Accepted: May 26, 2025; Published: May 27, 2025

Abstract

The information cocoon effect is becoming increasingly prominent. Secretarial positions, which serve as crucial nodes for organizational information acquisition, processing, and dissemination, are susceptible to being trapped in closed information environments. Based on the Push-Pull-Mooring (PPM) theoretical framework, this study constructs a theoretical model incorporating information similarity, social influence, and decision-making rationality as push factors; information overload, perceived active control of information, and algorithmic influence as pull factors; and information selection tendency and behavioral rigidity as mooring factors. We design an indicator system for each level of the model and empirically test it through a questionnaire survey of secretarial staff. The study reveals the multi-dimensional mechanisms underlying secretarial personnel's willingness to remain in information cocoons. It also provides recommendations from the perspectives of secretarial staff, platform algorithms, and the information supply side to help secretaries break out of the information cocoon predicament and enhance their information work performance.

Keywords: Secretarial Work, Information Cocoon, Push-Pull-Mooring (PPM) Theory

1. Introduction

Information management is a fundamental component of secretarial work and a key responsibility of the secretarial role. With the advent of the information society and the prevalence of big data, the role of information management in secretarial staff's daily work and in supporting leaders' decision-making has become increasingly prominent. Simultaneously, internet platforms have introduced personalized information recommendation services. As a ubiquitous phenomenon in how online users acquire and select information, the information cocoon exerts a significant influence on the information age. The concept of the information cocoon was first proposed by Cass R. Sunstein of the University of Chicago in his book Infotopia. He pointed out, "in information dissemination, since the public's own information needs are not comprehensive, the public pays attention only to things they choose and to communication fields that please them. Over time, they will be locked in an 'information cocoon' like a silkworm's cocoon"[1]. Information cocoon significantly impacts secretarial information management. Therefore, how to enjoy the conveniences brought by information technology while not being confined by the information cocoon has become a critical issue for secretarial professionals.

2. Literature Review

SunsteinCR first proposed the concept of the information cocoon and vividly described people as being like a "silkworm pupa" entrapped in a "cocoon" of homogenized information[2]. In recent years, an increasing number of scholars have focused on the phenomena of group polarization and echo chambers triggered by information cocoons. Examples include differences in college students' career development views arising from their immersion in different information cocoons in the digital age, information cocoons shaping readers' thinking in the promotion of generative AI reading, and the "Black Swan" event of Donald Trump's election as U.S. President. Scholars have also investigated the causes and influencing factors of information cocoon formation. For instance, Peng Lan and colleagues analyzed various factors leading to information cocoons from the perspective of multiple information acquisition channels and filtering mechanisms, subdividing them into factors such as individual information acquisition networks, path solidification, path deviation, platform filtering mechanisms, social networks, algorithms, and individual predispositions[3]. Zhang Yue and others constructed an information cocoon theoretical framework based on a homogenization perspective using four elements (user, technology, information, and society) and described four evolutionary paths that emerge from interpersonal diffusion and technical push in the interaction of these elements[4]. Many scholars in communication studies have attributed the causes of

information cocoon formation to insufficient information flow, mimetic transmission, and group pressure[5][6]. Clearly, researchers from different fields have analyzed why different groups may become trapped in information cocoons and have provided insights for exploring ways to dissolve information cocoons. Secretarial personnel, as a major group in various sectors, are likewise prone to being influenced by multiple factors that cause them to remain in information cocoons.

3. Theoretical Framework and Research Hypotheses

3.1 Push-Pull-Mooring (PPM) Theoretical Framework

PPM (Push-Pull-Mooring) theory, originally a migration theory, was initially developed to analyze factors influencing human migration behavior. This theory attributes migration behavior to the interaction among three forces: the push force of the place of origin, the pull force of the destination, and the mooring effect which weakens migration intention. The theory categorizes negative factors that prompt people to leave their current residence as the push effects of the origin (Push), such as having few employment opportunities or low income; and positive factors that attract people to move into a new residence as the pull effects of the destination (Pull), such as high economic development, good employment conditions, and comprehensive infrastructure. The combined action of push and pull effects results in some people moving to a new location, while others remain unaffected. Since the push forces of the origin and pull forces of the destination do not directly determine individual migration behavior, the model also incorporates various environmental and individual factors[7]. Bruce Moon introduced the mooring effect into the push-pull framework, forming the Push-Pull-Mooring (PPM) migration model. The mooring effect refers to various obstacles that keep people in their current residence and hinder migration, such as personal family structure, social relationships, migration costs, and cultural norms[8]. With the inclusion of the mooring effect, the PPM model provides a more comprehensive explanation of real-world phenomena, and it has been widely applied in studies of factors influencing population migration. The PPM framework has even been extended to research on user switching intention and behavior in various domains.

For example, Hou A.C.Y. et al., in studying player switching behavior in MMORPG (massively multiplayer online role-playing) games, identified game perception, need diversification, and social relationships as important factors influencing switching behavior[9]. Deng Xiu-jun and colleagues, using the PPM model, studied mobile short video platform user switching intentions and subdivided push effects into functional dissatisfaction, emotional dissatisfaction, and social dissatisfaction[10]. Zhang Yue et al., in exploring factors influencing network users' willingness to remain in information cocoons, considered user path dependence as a mooring effect, proposing that users' inherent experiences and habits can affect their willingness to stay in an information cocoon[11]. Thus, PPM theory already has a relatively mature research foundation in the field of media switching behavior. In the technology-driven macro-media environment, the information cocoon, as a unique form of information homogenization, is an appropriate phenomenon to analyze using the PPM framework for understanding secretarial staff's intentions to remain in or leave the cocoon environment.

Based on the PPM framework, we construct the theoretical model shown in Figure 1 for studying secretarial personnel's willingness to remain in information cocoons. This model classifies various influencing factors into the three categories of push, pull, and mooring effects.

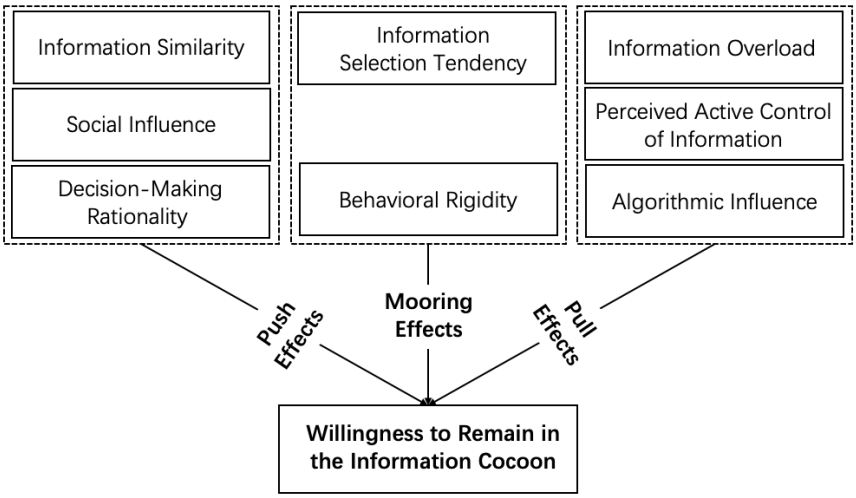

Figure 1. Theoretical Model

3.2 Research Hypotheses

Based on the PPM theoretical framework, this study investigates secretarial personnel's willingness to remain in information cocoons. The theoretical model is illustrated in Figure 1.

3.2.1 Push Effects

Push effects refer to factors that drive secretarial personnel to leave the information cocoon environment in their work. We subdivide push effects into the following factors: information similarity, social influence, and decision-making rationality.

Information Similarity: Information homogeneity refers to a high degree of similarity and monotony in information content. It is one of the most prominent negative effects of the information cocoon[12] and a crucial factor leading to opinion polarization and information narrowing. Studies show that when users are in an information environment, they can perceive the issue of homogenization[13], and homogenous information on social media causes users to feel bored and lose motivation to stay in the current information environment[14]. Therefore, when secretarial staff spend long periods in a content-similar cocoon environment at work, they tend to perceive the information as low-value. They easily become fatigued and bored with highly similar information, which reduces their willingness to remain in the information cocoon and prompts them to actively seek diversified information.

Social Influence: Social influence refers to the effect that groups have on an individual's behavior, attitudes, and values. When information content is highly heterogeneous, it can stimulate community members to consider completely different viewpoints and facilitate information flow between groups. In a secretarial office, secretaries are embedded in a large social network and inevitably receive influences from different groups when obtaining information[15]. Working closely with supervisors and subordinate units that may have different values, secretaries actively break down barriers between groups. They come into contact with groups holding different perspectives and are influenced by diverse viewpoints. Through this communication process, secretaries receive a variety of information types and must maintain critical and dialectical thinking. This continuous exposure to diverse information updates their value alignment and drives them to exit the information cocoon.

Decision-Making Rationality: The rationality of decision-making influences the scope of investigation and comparison of multiple information sources. Rational decision-making is about choosing the optimal solution to maximize organizational interests. Assisting leaders with decision-making is a core task of secretaries, and their information work forms the foundation and basis for leaders' rational decisions. To fully grasp the development of events, avoid one-sided or blind decisions, and improve decision accuracy, secretaries must provide leaders with comprehensive, precise, and systematic information. This requires breaking out of the information cocoon to collect and organize a wide range of information, rather than remaining confined to partial personalized information. The more valuable information secretaries need, the more they will voluntarily develop the intention to leave the information cocoon.

Therefore, we hypothesize that push effect factors will encourage secretarial personnel to leave the cocoon environment, exerting a negative influence on their willingness to remain in the information cocoon.

3.2.2 Pull Effects

Pull effects refer to factors that keep secretarial personnel immersed in the cocoon environment. We subdivide pull effects into the following factors: information overload, perceived active control of information, and algorithmic influence.

Information Overload: Information overload is a hallmark of the information age. With the widespread adoption of the Internet and the explosive growth of online platforms, people's methods of obtaining information have become increasingly diverse, and the volume of information received daily has surged, creating an imbalance between environmental demands and individual processing capacity. At the same time, the emergence of social media allows users to also become information producers, sharing original content online and further accelerating information production. In this information-explosive context, a large number of information producers and disseminators, driven by commercial interests, cater content to users, making user-centered production and dissemination relatively rare. For secretarial professionals, it is even more difficult to find comprehensive, high-quality information. Obtaining valuable information requires investing a great deal of effort and time. Therefore, secretarial staff, in order to shorten the time needed to gather information and improve work efficiency, will seek the assistance of intelligent algorithms. This reliance on algorithms enhances their willingness to remain in the information cocoon.

Perceived Active Control of Information: Perceived active control of information refers to the situation where users feel they have control over their information environment. When users perceive they have control over an

environment, their behavior tends to become more positive, and they are more willing to stay in that environment[16][17]. If secretarial personnel perceive that they have control and can exercise it over their current information environment, their willingness to remain in the cocoon will be strengthened.

Algorithmic Influence: The application of algorithms affects how information is presented in secretaries' work. Platform algorithms analyze data to infer users' interest preferences and browsing behaviors, filtering and recommending information that aligns with user interests, and selectively ranking content. This creates precise user "profiles" and enables personalized recommendations to meet user needs[18]. Given the vast, disordered, and chaotic nature of online information, secretarial staff often use search methods to fulfill their tasks. However, due to limitations in filtering mechanisms, many valuable pieces of information may be filtered out, limiting the range of information available to secretaries and constraining the breadth and depth of their knowledge. Although algorithmic technology can partially mitigate the effects of information overload by focusing on needed information, it also creates a relatively closed information environment. This reduced exposure to heterogeneous information further intensifies secretarial staff's willingness to remain in the current information cocoon.

Therefore, we hypothesize that pull effect factors will cause secretarial personnel to remain immersed in the cocoon environment, exerting a positive influence on their willingness to remain in the information cocoon.

3.2.3 Mooring Effects

Mooring (anchoring) effects refer to internal factors that affect secretarial personnel's likelihood of remaining in the information cocoon. We subdivide mooring effects into: information selection tendency and behavioral rigidity.

Information Selection Tendency: Information selection tendency refers to users filtering information based on their own experiences and preferences[19]. Users selectively avoid content that conflicts with their preferences, which is an important psychological motive leading to information homogenization and the formation of information cocoons[20]. Secretarial personnel, as consumers of information, are directly influenced by this tendency in their willingness to remain in an information cocoon. In their work, secretaries filter and screen information based on various interests and preferences. They naturally avoid information that conflicts with their own viewpoints and tend to engage with information that aligns with their perspectives. Consequently, the information they receive remains continuously one-sided; this bias can easily cause an individual secretary to become deeply trapped in an information cocoon.

Behavioral Rigidity: Behavioral rigidity refers to habitual information processing methods developed over a long time, making it difficult for an individual to change existing behavior patterns. On network platforms, users develop habitual paths for obtaining specific information, which is a primary manifestation of path dependence[2]. Research shows that the more habitual a user is, the higher their intention to continue using a platform and the lower their intention to switch; dependence on specific information acquisition paths in the network environment continues to deepen[21]. Secretarial personnel collect and organize information using their inherent experience and habits; platform algorithms push content based on personal preferences and history. Because the current information environment they access easily meets their work needs, secretaries' continued use intentions increase, forming a closed loop of information acquisition and further enhancing their willingness to remain in the information cocoon.

Therefore, we hypothesize that mooring effect factors will cause secretarial personnel to habitually depend on their existing information cocoon environment, exerting a positive influence on their willingness to remain in the information cocoon.

4. Data Collection and Analysis

Based on the push, pull, and mooring effects within the PPM theory, the indicator system for each level of the model was constructed. The specific indicators are shown in Table 1.

Table 1. Indicator System Classification

Primary Indicator	**Secondary Indicator**	**Tertiary Indicator**
Push Effect	Degree of Information Similarity	Content repetition rate
		Duration of exposure to homogenized content
		Tendency to seek diversified information
	Social Influence	Degree of group opinion convergence
		Community information adoption rate

		Perceived group pressure
	Decision-Making Rationality	Level of critical thinking
		Frequency of cross-verifying information
		Frequency of decision reflection
Pull Effect	Information Overload	Time consumed in information filtering
		Information processing efficiency
		Tendency to rely on algorithms for information filtering
	Perceived Active Control of Information	Autonomy in information filtering
		Frequency of algorithm adjustments
		Ability to manage information sources
	Algorithmic Influence	Similarity of recommended content
		Perceived level of algorithmic intervention
		Frequency of using personalized settings
Mooring Effect	Information Selection Tendency	Proportion of preferred information exposure
		Avoidance rate of heterogeneous information
		Diversity in active search behavior
	Behavioral Rigidity	Usage rate of habitual channels
		Frequency of trying new channels
		Index of information acquisition path rigidity

We designed a questionnaire to investigate the factors causing secretarial staff to remain in or leave the information cocoon at work, drawing upon mature scales and research. The questionnaire consists of three parts. The first part introduces the survey content and basic information about the questionnaire. The second part collects respondents' basic demographic information (e.g., gender, age, education). The third part is the main portion, which investigates factors influencing whether secretarial personnel remain in or leave the information cocoon. Before the formal survey, we randomly selected 15 secretarial staff for a pre-survey. Based on feedback and suggestions, the questionnaire was revised and then distributed via the "WenJuanXing" online platform. A total of 137 responses were collected. After assessing respondents' experience with the information cocoon and removing invalid questionnaires, 133 valid questionnaires remained, yielding an effective response rate of 97.1%.

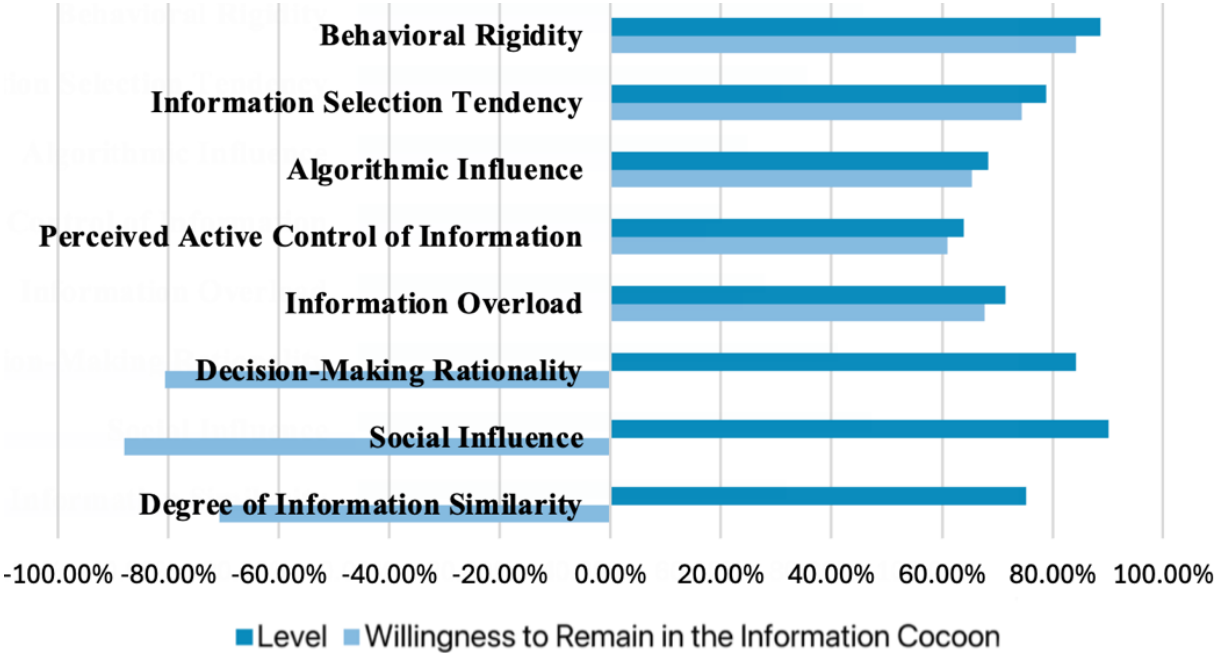

Figure 2. Influence of Each Factor Level on Willingness to Remain in the Information Cocoon

Figure 2 illustrates the influence of each factor's magnitude on the willingness to remain in the information cocoon. Using SPSS software for data analysis, we quantified secretarial staff's subjective perceptions of the three main effects and identified the factors affecting secretarial personnel's willingness to remain in the information cocoon at work (see Figure 2). All three proposed hypotheses were confirmed. The results show that secretarial staff's willingness to remain in the information cocoon is influenced by push, pull, and mooring effects: push effects have a negative influence on the information cocoon staying intention, while pull and mooring effects have positive influences.

5. Conclusions and Implications

5.1 Research Conclusions

Inspired by the application of the PPM model in studies of migratory behavior, this study examines the factors influencing secretarial personnel's willingness to remain in the information cocoon from the three dimensions of push, pull, and mooring effects, and reaches the following conclusions:

First, information homogeneity, social influence, and rational decision-making tend to weaken secretarial personnel's willingness to remain in information cocoons. In the media environment shaped by current technology, the diversity of information is lacking and it tends toward homogeneity, which easily generates negative emotions such as fatigue and boredom. These emotions, in turn, create a desire to leave the original information cocoon. Meanwhile, secretarial personnel are embedded in large social networks and, during information acquisition, inevitably receive influences from different groups, continuously updating their value alignment. To provide leaders with comprehensive, precise, and systematic information, secretaries must actively break out of the information cocoon, thereby spontaneously developing the intention to leave the information cocoon.

Second, information overload, perceived control, and algorithmic technology strengthen secretaries' willingness to remain in information cocoons, consistent with previous research findings. In the information-explosive context of society, secretaries will seek intelligent algorithms to help shorten the time required to obtain information and improve work efficiency, thereby enhancing their willingness to remain in information cocoons. When secretaries perceive that they have subjective control over the use of Internet platforms, they become even more immersed in the cocoon environment. Algorithmic technology creates a relatively closed information environment, reducing secretaries' desire for heterogeneous information and further increasing their willingness to remain in the current information cocoon.

Finally, it is evident that secretaries' own selective exposure and path dependence–related mooring effects have the strongest positive influence on their willingness to remain in information cocoons. Secretarial personnel easily choose to avoid content that conflicts with their preferences and tend to engage with information that aligns with their viewpoints. At the same time, secretaries' habitual and dependent behaviors limit their chances of encountering different information environments. Furthermore, due to market competition and the associated interests, network platforms have largely operated independently, leading to significant deficiencies in information exchange and communication. As a result, when secretaries use their inherent paths to acquire information, their range of choices narrows, causing them to miss many opportunities to access other information.

5.2 Discussion and Implications

Enhance Information Literacy and Discernment: Secretarial staff should improve their information literacy and ability to discern information. As the primary agents responsible for identifying and avoiding information cocoons in their work, cultivating and enhancing secretaries' information literacy is especially crucial. Confronted with the vast and complex array of online information, obtaining truthful information is like panning for gold in a sea of data. Therefore, when selecting information, secretaries must learn to skillfully distinguish authentic information. They should use rational and appropriate perspectives to discern the veracity of information and analyze it, eliminating falsehood and preserving truth. Secretaries must filter out information that could interfere with rational decision-making. Valuable online information often contains deep significance; if secretaries remain only at the surface during information processing, their work will struggle to make breakthrough progress. For information resources obtained through various media channels, secretaries must develop their own abilities to process and evaluate information. They should uncover the underlying connotations of information, compare multiple similar information sources, deeply understand the messages conveyed, and predict future development trends. By fully exploiting information resources, secretaries can better serve their current tasks. Secretaries can also engage actively in information communities, providing timely feedback, reflection, and absorption of new search channels, content, and viewpoints. This deep engagement enhances their information literacy while also mitigating the negative impacts of path dependence and homogeneous content on their work.

Optimize Platform Algorithms: Platforms should optimize intelligent algorithm technologies and provide richer information combinations. While platforms currently use recommendation algorithms based on users' personalized information, they should also push content outside the cocoon by using technology to deliver a certain proportion of heterogeneous information. This practice can avoid information homogenization and provide a richer mix of information, thereby increasing secretaries' chances of serendipitous information discovery. In guiding secretaries to "step out of their comfort zones" during information processing, platforms should expose them to diverse content, broadening their work perspectives and making their approach to tasks more expansive. Consequently, secretaries will have a broader and more comprehensive understanding when providing information to leaders. In accordance with data and information regulations, platforms should actively adjust and upgrade their algorithmic recommendation technologies. The conditions and scenarios for using recommendation algorithms must strictly follow legal frameworks. Platforms should increase investment in algorithmic R&D, identify and cultivate outstanding algorithmic talent, and improve algorithm parameters and evaluation methodologies. Poor-quality information and misinformation should be automatically identified and barred from publication and dissemination, ensuring the quality of information that the platform pushes to users.

Deepen Supply-Side Information Reforms: It is important to deepen supply-side structural reforms in the information domain and increase the mobility of high-quality online information. Emphasis should be placed on improving the quality of information supply through reforms. By adjusting the information structure and correcting distortions in information allocation, we can expand effective information supply. Achieving a transformation and upgrade of the supply structure requires focusing on the production end, the dissemination end, and the supply side. Enhancing the adaptability and flexibility of the information supply structure to changes in secretarial staff's needs will open new pathways for producing and preserving high-quality content and enhancing information flow to break the information cocoon. First, at the macro policy level, authorities should signal the creation of a stable, progressive, and positive macro environment to ensure the sustained development of supply-side structural reforms in information. Second, at the industry policy level, efforts should be strengthened to guide secretarial personnel across various industries and enterprises in the development and utilization of information resources, and to accurately orient the direction of supply-side structural reform of social information. Finally, at the micro policy level, it is important to stimulate the vitality of high-quality information content producers. This could involve mobilizing information producers, disseminators, and consumers to protect high-quality information content through related incentive policies.

Acknowledgments

This paper was supported by Nanchang Normal University student research projects (No.23XSKY16).

References

[1] Sunstein, C. R. (2008). *Infotopia: How many minds produce knowledge* (Bi Jingyue, Trans.). Beijing: Law Press.

[2] Sunstein, C. R. (2006). *Infotopia: How many minds produce knowledge*. Oxford University Press. https://doi.org/10.1093/oso/9780195189285.001.0001

[3] Peng, L. (2020). Factors leading to information cocoon and 'breaking the cocoon' path. *Journalism Journal*, 2020(01), 30–38+73.

[4] Zhang, Y., Zhuang, B., Li, Q., & Zhu, Q. (2023). Homogenization dilemma: Conceptual analysis and theoretical framework of the information cocoon. *Journal of Library Science in China*, 49(03), 107–122.

[5] Shi, A. (2019). Analysis of the information cocoon effect from a cybernetic perspective. *Journalism Frontier*, 2019(1), 77–78.

[6] Zhang, L. (2017). The reality and future imagination of intelligent media — Changes in the news field as an example. *Journal of Zhengzhou University (Philosophy and Social Sciences)*, 50(4), 146–149.

[7] Ravenstein, E. G. (1889). The laws of migration. *Journal of the Royal Statistical Society*, 52(2), 241–305. https://doi.org/10.2307/2979333

[8] Moon, B. (1995). Paradigms in migration research: Exploring 'moorings' as a schema. *Progress in Human Geography*, 19(4), 504–524. https://doi.org/10.1177/030913259501900404

[9] Hou, A. C. Y., Chern, C. C., Chen, H. G., et al. (2011). 'Migrating to a new virtual world': Exploring MMORPG switching through human migration theory. *Computers in Human Behavior*, 27(5), 1892–1903. https://doi.org/10.1016/j.chb.2011.04.013

[10] Deng, X., Li, Y., & Xiong, W. (2024). Emotional exhaustion, group identity, and social network maintenance

— A study on mobile short video platform user switching intentions based on the push-pull-mooring migration theory model. *Journalism Journal*, 2024(04), 61–75.

[11] Zhang, Y., & Li, Q. (2022). A study of factors influencing online users' willingness to remain in the information cocoon based on PPM theory. *Modern Information*, 42(04), 52–61.

[12] McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415–444. https://doi.org/10.1146/annurev.soc.27.1.415

[13] Zhang, H. (2021). Research on the conceptual framework of the formation mechanism of network users' information cocoon. *Information Theory and Practice*, 2021(Online).

[14] Lin, H. F. (2008). Determinants of successful virtual communities: Contributions from system characteristics and social factors. *Information & Management*, 45(8), 522–527. https://doi.org/10.1016/j.im.2008.08.002

[15] Wang, Y., & Zhang, M. (2023). Study on factors and associated paths of online users' information cocoon. *Modern Information*, 43(11), 158–167.

[16] Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, 60(3), 50–68. https://doi.org/10.1177/002224299606000304

[17] Ghani, J. A., & Deshpande, S. P. (2010). Task characteristics and the experience of optimal flow in human-computer interaction. *Journal of Psychology*, 128(4), 381–391.

[18] Chen, J. (2023). The impact of information cocoon on college students and strategies for breaking the cocoon. *Computer Knowledge and Technology*, 19(27), 107–109.

[19] Wang, R., Feng, B., & Li, M. (2017). Mechanism of selective attention and influencing factors. *Psychology Technology and Application*, 5(9), 567–573.

[20] Zhang, Y., & Zhao, Y. (2021). Analysis of the causes of information cocoon in a mobile reading environment. *Modern Information*, 41(10), 3–11. https://doi.org/10.1155/2021/6617286

[21] Ye, C., & Potter, R. (2011). The role of habit in post-adoption switching of personal information technologies: An empirical investigation. *Communications of the Association for Information Systems*, 28(1), 585–610. https://doi.org/10.17705/1CAIS.02835