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Exploring the psychological mechanisms of library anxiety considering achievement motivation and goal orientation

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Abstract

Introduction. Although library anxiety is recognised as having a negative impact on people's exploration, its mechanisms are unknown. Moreover, no studies have systematically demonstrated the mechanisms through which exploration is modified in the context of library anxiety. This study reviewed the context and results related to library anxiety and hypothesised that achievement motives and goal orientations underlie changes in exploration.

Method. A survey of approximately 2,000 participants was conducted and 642 responses were collected.

Results. A covariance structure analysis of the responses revealed that, in most cases, the hope of success was significantly related to mastery goals and information seeking from all sources, with the aim of personal growth and a deeper understanding of the task. When motivated by fear of failure, participants avoid damaging their self-esteem by envisioning the event of failure or being treated lightly by others.

Conclusions. These results imply that when one's goal is to prevent the loss of self-esteem or being treated lightly by others, seeking information from other people is avoided in favour of searching for information from non-human sources.

Background

Library users are overwhelmed by the complexities of library services and the sheer volume of information sources. Hence, Mellon (1986) investigated the process of writing reports for assignments at the library. Students expressed fear of approaching librarians and their discomfort with the library rather than difficulties in finding information. Users with library anxiety feel helpless when searching for information in the library; they cannot navigate the library well, their library skills are inferior to those of their peers, they do not know how to start searching for materials, and they struggle to find the materials they need. Mellon (1986) states that these reactions are natural and that library anxiety can be resolved by building on successful experiences. Library anxiety has also been examined among postgraduates (Jiao & Onwuegbuzie, 1998) and immigrants (Mengxiong, 1995). Indeed, library anxiety contributes to poor academic performance and needs to be addressed (Jan, Anwar, & Warraich, 2020; Kwon, 2008).

Library anxiety has over time grown to include not only searching libraries, but also the Web. The adoption of digital environments (e.g., digitisation, the web) in libraries has led to widespread library anxiety. For instance, online public access catalogues and other web-based information retrieval services are no longer mediated by librarians and other professionals but are directly provided to users (Bandura, Freeman, & Lightsey, 1999; Mizrachi & Snunith, 2004; Omran, 2001). Users are expected to obtain the information they seek using these technologies.

Library anxiety is primarily induced by users' psychology (Agalya, Singson, Thiyagarajan, & Gogoi, 2022; Akbarzadeh & Bigdeli, 2020; Jan, Anwar, & Warraich, 2020; Kwon, 2008). Jan et al. (2020) focused on emotional intelligence (EI), that is, one's ability to monitor their own and others' emotions, identify them, and adjust one's thoughts and behaviours accordingly. They found a positive relationship between EI and library anxiety (r (140) =0.18, p=0.04), with a one-unit increase in EI inducing a 0.23-unit increase in library anxiety. Thus, students with high EI are sometimes unwilling to utilise libraries due to fear, that is, they experience library anxiety. It is important to note that EI affects how university students (participants) deal with library anxiety and does not directly relate to library anxiety. Jan et al. (2020) showed that psychological factors regulate library anxiety. However, the specific psychological factors EI monitors and their psychological mechanisms have not been clarified regarding library anxiety. Other studies exploring library anxiety-related psychological factors (Agalya et al., 2022; Akbarzadeh & Bigdeli, 2020; Kwon, 2008) have focused on the degree of anxiety experienced and familiarity with libraries and librarians, neglecting not only the multiple psychological factors related to library anxiety but also the psychological mechanisms through which library anxiety occurs. Additionally, differences between searching and stopping searches among those with library anxiety have not yet been addressed.

Most previous studies on library anxiety have addressed exploration as a component of task performance or learning activities. Therefore, based on findings in educational psychology, achievement motivation and goal orientation are psychological factors that may be related to library anxiety. This makes sense as library anxiety is a psychological state that can occur during learning when achievement motivation and goal orientation influence the desire to complete learning tasks and not fail. Achievement motivation is a psychological inclination that can be positively or negatively driven. Positive achievement motivation might be the hope of success, which represents the desire to achieve success in a goal or task. Negative achievement motivation could take the form of fear of failure, which represents the desire to avoid failure. Hope of success is related to experiencing pride when achieving a goal, whereas fear of failure is related to experiencing shame when a goal is not achieved (Elliot & Church, 1997). Goal orientation is a goal that is set and positioned to recognise or monitor one's achievement motivation and satisfy it (Atkinson, 1964). Goal orientations can be categorised into three types: mastery, performance-approach, and performance-avoidance goal orientations (Elliot & Harackiewicz, 1996). Mastery goal orientation refers to being motivated to improve or master a task. Performance-approach

orientation refers to being motivated by the desire to obtain a positive evaluation in a task, whereas a performance-avoidance goal orientation refers to being motivated by fear of failure stemming from being evaluated negatively and being seen as incompetent. Regarding the relationship between these three goal orientations, academic performance, and motivation, several studies have confirmed a positive correlation between performance-approach goals with intrinsic motives and grades and a negative correlation between performance-avoidance goals with intrinsic motivation and grades (Elliott & Dweck, 1998; Elliot & Harackiewicz, 1996; Tanaka & Yamauchi, 2000).

Hypothesis

Many studies on library anxiety have used exploration as part of a task or task performance with learning as the research context. It has been proposed that library anxiety is an effect of achievement motivation and goal orientation—concepts widely studied in educational psychology—and is reflected in factors such as underestimating one's own skills, avoiding behaviours for fear others would see one as incompetent, and changing one's behaviour.

Therefore, in the present study, based on a review of the seminal papers referenced above, it was hypothesised that (1) achievement motivation, which is the inherent psychological inclination of a person, influences goal orientation based on how they approach and perform each task (Atkinson, 1964; Elliot & Church, 1997; Elliott & Dweck, 1998; Elliot & Harackiewicz, 1996; Tanaka & Yamauchi, 2000), and (2) the interaction between achievement motivation and goal orientation modifies exploratory behaviour (Bandura, Freeman, & Lightsey, 1999; Jan, Anwar, & Warraich, 2020; Jiao & Onwuegbuzie, 1998; Kwon, 2008; Mellon, 1986; Mengxiong, 1995; Mizrachi & Snunith, 2004; Omran, 2001).

Methods

Survey participants and procedures

The study participants were all first-year undergraduate students (2,032 individuals) at a Japanese national university. The university has faculties of informatics, engineering, science, agriculture, humanities and social sciences, and education. The survey was conducted between 6-22 July 2021. We limited the survey to first-year undergraduates because we thought that, as they had only recently enrolled, they would all have similar familiarity with the library and classes.

Survey scales

The survey included the revised 10-item version of the Achievement Motives Scale (AMS-R) by Lang and Fries (2006) to measure achievement motives, Elliot and Church's (1997) Achievement Goal Scale as a measure of goal orientation, and the information-seeking behaviour scale by Igarashi (2003).

The AMS-R consists of two subscales: hope of success and fear of failure. Responses to the AMS-R were obtained using a 4-point Likert scale (1=not at all true; 2=not very true; 3=somewhat true; 4=very true). The goal orientation scale consists of three subscales: mastery goals, performance-approach goals, and performance-avoidance goals, while the information-seeking behaviour scale consists of three subscales: implementing mass media resources, implementing interpersonal resources, and independence in information seeking. Both scales were answered using the same 4-point Likert scale employed for the AMS-R. Each scale was translated and survey participants completed the scale in their preferred language. The wording of some items was modified to suit the Japanese learning environment. The achievement motive and goal orientation scales explore general psychological factors that govern behaviour during learning. Although not limited to libraries, they are useful for understanding library anxiety in the context of learning. Participants' tendency to explore was measured using the information-seeking behaviour scale.

Results

Factor analysis, correlation analysis

Overall, 642 (31.59%) responses were submitted: sex, 344 females and 298 males; mean age: 18.31 years (*SD*=1.13).

Tables 1–3 present the results of factor analyses (maximum likelihood method, Promax rotation) for the achievement motive, goal orientation, and information-seeking behaviour scales, respectively. For the AMS-R in Table 1, based on the parallel analysis and factor loadings, a two-factor structure similar to that in previous studies was judged to be optimal: RMSR=.05, RMSEA=.07, ω=.93; additionally, the fit and stability of the model were judged to be sufficiently secure to withstand analysis. The factors were named fear of failure (FF) and hope of success (HS) with reference to previous studies. As in past studies, the goal orientation scale (in Table 2) was deemed ideal, with a three-factor goal structure: mastery goal (MG), performance-approach goal (AP), and performance-avoidance goal (AV) (RMSR= 04, RMSEA=.06, ω=.94). Finally, the previous study's three-factor structure was judged to be optimal for the preference scale linked to information-seeking behaviour (in Table 3) (RMSR=.04, RMSEA=.06, ω=.94) and the factors were named implementing mass media resource (MM), implementing interpersonal resource (IP), independence in Information seeking (II), as per previous studies.

	F1	F2	commonality
Fear of failure			
If you are not sure that you will succeed, you are anxious about everything you do	**.77**	-.05	.59
Feel quite anxious in new situations, even if no one is watching	**.75**	-.06	.55
Fear of failing in slightly difficult situations when so many things are up to	**.73**	-.04	.53
If the problem cannot be resolved immediately, I begin to feel insecure	**.65**	.07	.43
Hope of success			
Interested in situations where they can test their competence	-.06	**0.8**	.67
Attracted by challenges that allow them to test their own abilities	-.04	**0.78**	.61
I like situations where I can discover how much I am capable of doing	-.05	**0.61**	.37
Enjoy situations where you can make the most of your abilities	-.05	**0.41**	.17
When faced with a solvable problem, they are inclined to start solving it	.12	**0.3**	.08

Table 1. Factor analysis: achievement motive scale

	F1	F2	F3	commonality
Performance-approach goal				
I aim to get better grades than others	**.79**	.00	-.01	.62
For me it is important to be seen as being able to do better than everyone	**.75**	-.02	-.15	.49
Getting better marks than others is important to me	**.74**	-.01	.04	.58
I want to get good grades so that my family, friends and others think I can	**.71**	-.11	.05	.50
The thought of getting better grades than everyone else around you	**.61**	.19	-.06	.45
Striving to show that they are more capable than others	**.58**	.19	-.04	.42
I'd like to make sure I don't get worse grades than the rest of you	**.50**	.00	.30	.46
Mastery goal				
I sometimes wish I had a broader or deeper knowledge of the content of	-.04	**.70**	-.01	.48
I prefer to learn new things, even if they are a bit more difficult	.08	**.67**	-.13	.49
I want to learn as much as I can in class	.00	**.60**	.01	.36
I prefer to do interesting content in class, even if it is a little difficult,	.04	**.53**	-.12	.30
I would like to fully understand the material distributed in class	.06	**.50**	.07	.28
It's important for me to make sure that I understand the lesson content as	-.06	**.40**	.26	.21
Performance-avoidance goal				
I would worry about the possibility of getting a bad grade in class	-.12	.10	**.89**	.72
Often wonder what they would do if they got a bad grade	-.14	.10	**.88**	.70
I wish I didn't get bad grades	.05	-.08	**.41**	.19
I don't want to ask strange questions to teachers and TAs and have them	.19	-.13	**.30**	.17

Table 2. Factor analysis: goal orientation scale

	F1	F2	F3	commonality
Implementing interpersonal resource				
When doing something new, ask someone who knows about it	**.79**	-.13	.03	.57
Actively ask others when researching matters of interest	**.78**	-.07	-.11	.54
When in doubt, ask someone you trust	**.68**	-.09	.04	.43
I try to have a wide range of contacts with people who have different types	**.50**	.03	.01	.27
When gathering information, do not ask someone	**.46**	.01	-.20	.20
Independence in Information seeking				
Gather the information you think you need on your own	-.15	**.95**	-.20	.62
Gathering your own information on matters of interest	-.02	**.69**	-.08	.40
I rarely willingly look something up	-.18	**.55**	-.05	.23
I want to get information promptly	.13	**.46**	.02	.29
If I don't understand something, I am quick to look it up	-.04	**.44**	.19	.33
I want to investigate thoroughly until I am satisfied	.07	**.41**	.19	.25
I prefer to know a wide variety of things	.10	**.37**	.09	.15
As much as possible, I want to know the essence of things	.19	**.30**	.19	.22
Implementing mass media resource				
If you don't understand something, first look it up in a book, magazine or	-.17	-.11	**.92**	.66
When you want to know something, look at books, magazines and websites	-.11	.01	**.72**	.49
Refer to books, magazines and websites when doing something new	-.06	-.06	**.67**	.38

Table 3. Factor analysis: information-seeking behaviour scale

Table 4 presents the correlation coefficients of each subscale, illustrating that FF was strongly and positively correlated with AV (r=.54, p<.01); but not with MG. HS was subsequently found to be strongly positively correlated with MG (r=.48, p<.01) and AP (r=.40, p<.01) but not with AV. These results are consistent with those reported by Elliot and Church (1997). MG was significantly and positively correlated with AP (r=.34, p<.01). For information-seeking behaviour, AV was moderately positively correlated with MM (r=.43, p<.01), and MG with IP (r=.39, p<.01), II (r=.42, p<.01), and MM (r=.41, p<.01). Other positive correlations were found between IP with II (r=.42, p<.01) and MM (r=.34, p<.01), and between II with MM (r=.78, p<.01).

	1	2	3	4	5	6	7	8
1. FF	-							
2. HS	.08†	-						
3. AV	.54**	.08†	-					
4. MG	.04	.48**	.06	-				
5. AP	.16**	.40**	.05	.34**	-			
6. IP	.01	.18**	.05	.39**	.11*	-		
7. II	.01	.27**	.06	.42**.	.16**	.42**.	-	
8. MM	.14**	.29**	.43**.	.41**	.25**	.34**	.78**	-

Table 4. Correlation coefficients between subscales

The impact of achievement motive and goal orientation on information-seeking behaviour

A covariance structure analysis was conducted to test the model in which the two achievement motives led to information-seeking behaviour, either directly or via goal orientation (Fig. 1). The model's goodness of fit was generally good, with GFI = 1.00, AGFI = .91, CFI = .95, and RMSEA = .07.

Looking at the path from achievement motive to goal orientation, HS had a direct positive influence on AP (.39) and MG (.47). FF had a direct positive influence on AV (.54). IP (.40) positively influenced MG, II (.39), and MM (.41). Additionally, AV had a direct positive effect on MM (.41). IP and II were influenced only by MG, whereas MM was influenced by both MG and AV to the same extent. Focusing on indirect effects, HS affected IP (.19), II (.18), and MM (.18) via MG. Conversely, FF was found to affect MM (.22) via AV (.22).

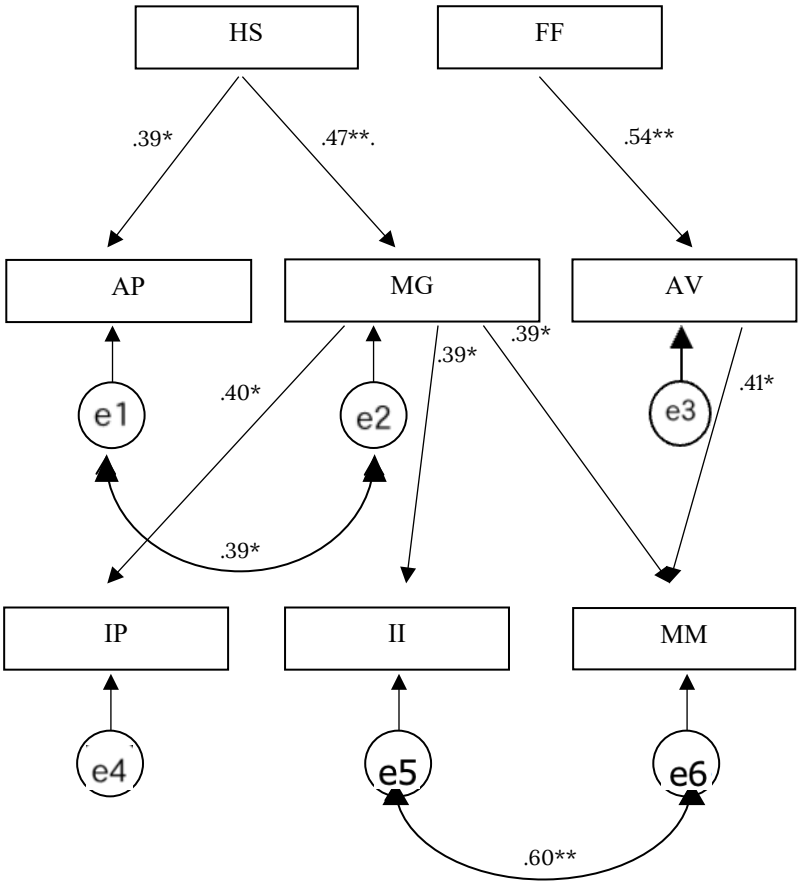

Figure 1. Causal model of achievement motive, goal orientation and preferences in information-seeking behaviour (Only significant paths are shown; * p<.05, ** p<.01)

Discussion

First, regarding hypothesis 1, the results confirmed that hope of success has a direct positive influence on performance-approach and mastery goals and that it significantly influences mastery goals. Further, it was confirmed that fear of failure directly influences performance-avoidance goals; thus, hypothesis 1 was accepted. This result was consistent with the findings of Elliot and Church (1997) and Mitsunami (2010). Hope of success appears to lead to mastery goals, whereas fear of failure tends to lead to performance-avoidance goals. Regarding hypothesis 2, the results showed that the performance-approach goal had no effect on the implementing interpersonal resources, independence in information seeking, or implementing mass media resources, while the mastery goal had a similar positive effect on these three factors, and the performance-avoidance goal had a positive effect on implementing mass media resources; thus, hypothesis 2 was partially supported.

Hope of success affected mastery goals in most cases and had the same effect on implementing interpersonal resources, independence in information seeking, and implementing mass media resources. Therefore, when the focus is on personal growth and a deeper understanding of the task rather than on comparison with others, information seeking is actively carried out using all sources of information. However, when fear of failure is the motive and a performance-avoidance goal is adopted, searching for information through others is avoided, and searching using interpersonal resources is preferred to prevent damage to self-esteem or being treated lightly by others in the event of failure. Mass media resource searches tend to occur regardless of goal orientation.

Limitation and future study

This study was conducted among university students. As attitudes towards tasks and challenges in learning are thought to differ at each educational stage, the results obtained cannot be generalised to all educational stages. In addition, this study adopted a simplified survey and model to first grasp the potential psychological mechanisms involved in library anxiety. However, the fact that the performance-approach goal did not affect any of the exploratory behaviours suggests the existence of other variables. Building on this research, it will be necessary to investigate the relationships between various cognitive factors and learning-related variables.

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