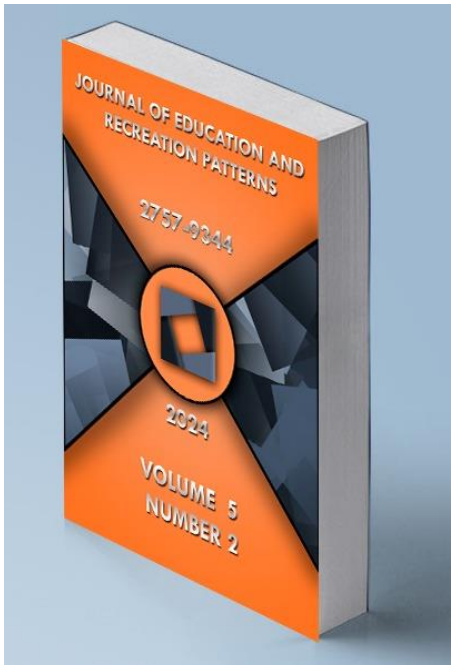

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Investigation of Basketball Players' Mental Training and Courage Levels and Their Perception of Struggle and Threat in Sports

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ABSTRACT

The purpose of this research; The aim of this study is to examine the mental training and courage levels of basketball players and their perception of struggle and threat in sports. The research included 202 males (70.1%) (Mean age=22.92±4.18) and 86 females studying at the Faculties of Sports Sciences and Schools of Physical Education and Sports of universities located in the Eastern and Southeastern Anatolia regions and playing in basketball clubs. A total of 288 competitive basketball players (29.9%) (Mean age=21.85±2.75) participated voluntarily. The research was designed in relational screening model. The research was designed using the relational screening model. The personal information form created by the researchers as a data collection tool within the scope of the research was developed by Behnke et al. (2019) and the revision of the Turkish inventory was conducted by Yarayan and İlhan (2018). The mental training inventory was developed by Rossato, Uphill, Swain, and Coleman (2018). The struggle and threat scale in sports adapted to Turkish by Türkyılmaz and Altıntaş (2020) and the courage scale developed by Konter and Johan (2012) were used. In the analysis of the data, first the skewness and kurtosis values were examined for normality assumptions, and it was determined that the distribution was normal. In this regard, t-test was used to compare two independent groups, One Way Anova test was used to compare more than two independent groups, and Pearson correlation analysis was used to determine the relationships between variables.

When the findings obtained within the scope of the research were examined, statistically significant relationships were determined between the mental training level of basketball players and their courage, struggle and threat level. Based on these results, it has been determined that as the level of mental training increases, the level of courage, struggle and threat will also increase. However, when the statistical analyzes for demographic variables within the scope of the research are examined; It was not determined that the variables of gender, level of sportsman ship and years of doing sports created a significant difference between the groups.

In conclusion, It has been determined that the value of mental training cannot be denied in sports that require intense physical and mental effort, such as basketball, and it is though that the mental strength of athletes can make them more resilient not only physically but also emotionally and psychologically.

Keywords: Basketball, Courage Level, Mental Training, Struggle, Threat Perception.

INTRODUCTION

Recent studies show that individuals who engage in high levels of physical activity and sports in their daily lives tend to be healthier and mentally stronger (Akgül et al., 2024; Arı et al., 2020; Dursun et al., 2021; Edwards and Barker, 2015; Yarayan et al., 2024). People who are involved in sports professionally must manage and control their sports activities and exercise psychology effectively. Sports and exercise psychology is defined as a scientific discipline that studies human behavior in sports-related fields, which are sub-branches of these two sciences (Gill, 1986). Strength and conditioning training in sports activities has been a widespread practice for many years, especially in regions like America and Europe, as well as in our country, where its popularity and application have increased in recent years. The primary goal of this type of training is to scientifically enhance the strength and overall fitness levels of athletes. In addition to physical and conditioning training, mental training has been shown to contribute to solving anticipatory, mental, and behavioral problems (Altıntaş & Akalan, 2008). The ultimate aim is to maximize athletes' performance during competitions, thereby optimizing their efficiency on the field. By integrating scientific knowledge and methods into strength and conditioning programs, athletes become better equipped to achieve success. Studies focusing on optimal performance and psychological factors are also present in the literature (Yarayan et al., 2023; Yarayan & Gülşen, 2023; Yarayan et al., 2022).

Strength and conditioning training involve the planning and implementation of exercises specifically designed to improve various motor and anthropometric factors that influence athletic performance. Advanced motor skills, such as dribbling abilities, shooting accuracy, and passing precision, play a crucial role in distinguishing the best basketball players from their peers. However, to achieve the highest performance levels, athletes must not only possess exceptional skills but also maintain optimal physical health and conditioning, surpass basic standards, and achieve long-term physical capacity (Bompa & Haff, 2015).

Although basketball is a team sport, the importance of evaluating athletes as individuals during training cannot be overlooked. Each player has unique motor and morphological characteristics, which require training programs tailored to their positions and individual needs. The frequency of training required for each athlete may vary.

In today's basketball environment, technical and tactical skills remain important, but motor skills significantly impact performance. The less fatigued an athlete is during competition, the better they can understand the game, execute technical maneuvers, and make informed decisions, ultimately increasing their chances of success. Numerous studies have highlighted the importance of strength, anaerobic capacity, and other motor skills in basketball players, emphasizing their role in optimizing performance.

Regardless of the sport, being physically prepared is essential for success in any discipline, but being mentally prepared is equally important. When athletes are mentally ready, it becomes easier for them to focus before the competition begins. It is said that physical, mental, and spiritual success together lead to sporting achievement (Anshel, 1990).

In the sport of basketball, mental training during activities enhances competitive performance and helps athletes focus more on the game. It has also been observed that athletes who are strong in mental training make better decisions due to their increased confidence. They are thought to react more quickly to threats posed by their opponents.

In this context, the aim of this study on basketball players is to examine their mental training and courage levels, as well as their perceptions of competition and threats in sports.

METHOD

Research Model

In this study, designed using a relational survey model, the relationships between basketball players' mental training and courage levels, as well as their levels of perception of competition and threats in sports, were examined. "The aim of this model is to determine the existence and/or degree of co-variation between two or more variables" (Fraenkel, Wallen, &Hyun, 2012; Creswell & Creswell, 2017).

Universe and Sample

The data for the study consists of university students and basketball club players who are over the age of 18 and have been actively playing basketball for at least one year in certain cities and universities in the Eastern and Southeastern Anatolia regions in 2023-2024. Necessary explanations were made to the participants in the relevant educational institutions and sports clubs and their voluntary participation was ensured. Participants were selected using pragmatic sampling methods, considering accessibility and cost-effectiveness (Gravetter & Forzano, 2012). A total of 288 athletes participated in the study, including 202 males (70.1%) and 86 females (29.9%). Ethical approval for conducting this research was obtained from Siirt University, with the ethics committee approval number 645 dated 14.08.2023.

Data Collection Tools

In this study, the data collection tools included a personal information form created by the researchers, which consisted of questions on gender, sports level, and years of sports activity. Additionally, the Mental Training Inventory, developed by Behnke et al. (2019) and revised for the Turkish inventory by Yarayan and İlhan (2018), was used. The inventory consists of basic mental skills (4 items) α=0.82), mental functioning skills (6 items) (α=0.82), personal communication skills (4 items) (α=0.85), self-talk (3 items) (α=0.91), mental visualization (3 items) (α=0.82) and a total of 20 items. The inventory is a 5-point Likert type scale. The Sport Competition and Threat Scale, developed by Rossato, Uphill, Swain, and Coleman (2018) and adapted into Turkish by Türkyılmaz and Altıntaş (2020), along with the Courage Scale developed by Konter and Johan (2012), were also utilized. Courage scale in sports the scale is a 5-point Likert-type scale consisting of 5 sub-dimensions and 31 items. Competence-mastery (confidence) (,a=0.82); Stability (,a=0.82); Assertiveness (,a=0.72); Taking risks (facing fears) (,a=0.72); Self-sacrifice (,sacrifice) (,a=0.61). The scale of struggle and threat perception in sports consists of a total of 12 items and two subscales presented in a 6-point Likert format.

Data Analysis

The statistical analysis of the data obtained from the scales was conducted using the SPSS 22.0 software. As part of the research, the missing data were first evaluated to verify the appropriateness of the analyses and whether the assumptions were met. At this stage, the data were tested for normality using the Kolmogorov-Smirnov test, and it was determined that the data did not meet the normality assumptions. In this context, the skewness and kurtosis values of -2 to +7, as suggested by Hong, Malik, and Lee (2003), were considered, and it was observed that the distribution was normal (Table 1). To determine the differences in the courage levels of basketball players based on gender and athletic level variables, a T-test was conducted to identify the source of the differences. A one-way ANOVA was used based on the number of years of sports participation. After this analysis, Pearson correlation analysis was also utilized to determine the relationships between the scales.

FINDINGS

In the findings section of the research, information regarding the findings obtained as a result of the analysis of the data obtained in line with the purpose is included.

Table 1

Demographic Characteristics of Participants

Variables	Groups	Frequency (n)	Percentage (%)
Gender	Male	202	70,1
	Female	86	29,9
Sports Level	Professional	54	18,8
	Amateur	234	81,2
Years of Sports Participation	1-3 Years	67	23,3
	4-6 Years	77	26,7
	7-9 Years	62	21,5
	10 Years and Above	82	28,5

Table 1 presents the distribution of demographic characteristics among the research participants, indicating that out of 288 basketball players, 70.1% were male and 29.9% were female. Additionally, the majority of the athletes were classified as amateur (81.2%) compared to professional (18.8%), and the distribution of years of sports participation varied, with the largest group having participated for 10 years and above (28.5%).

Table 2

Mean, Standard Deviation, Skewness, and Kurtosis Values of the Scales Used in the Study

Scales	N	M	SD	Skewness	Kurtosis
Total Mental Training	288	77,64	11,446	-1,559	5,633
Perception of Threat	288	27,69	8,328	-,155	-,891
Perception of Competition	288	24,00	4,865	-1,388	2,221
Courage	288	114,69	19,384	-,644	,906

Table 2 shows that skewness values range between -1.559 and -0.155, and kurtosis values range between -0.891 and 5.633. Considering the skewness and kurtosis values of -2 to +7, as suggested by Hong, Malik, and Lee (2003), it was determined that the distribution follows a normal distribution. Table 2 displays the descriptive statistics, including the mean (M), standard deviation (SD), skewness, and kurtosis values for each scale utilized in the study. The results indicate that all scales exhibit acceptable levels of skewness and kurtosis, suggesting that the data distributions are approximate normality. Specifically, the Total Mental Training scale has a mean of 77.64 (SD = 11.45) with slight negative skewness (−1.56) and elevated kurtosis (5.63). The Perception of Threat scale shows a mean of 27.69 (SD = 8.33) with minimal skewness (−0.16) and slight negative kurtosis (−0.89). The Perception of Competition scale presents a mean of 24.00 (SD = 4.87) with notable negative skewness (−1.39) and positive kurtosis (2.22). Lastly, the Courage scale has a mean of 114.69 (SD = 19.38) with moderate negative skewness (−0.64) and slight positive kurtosis (0.91). These statistical properties confirm the suitability of the scales for subsequent analyses in the study.

Table 3

Independent Samples T-Test Results for Gender Differences

Scales	Gender	N	M	SD	t	df	p
Total Mental Training	Male	86	77,25	9,033	-,426	286	0,671
	Female	202	77,81	12,348			
Perception of Threat	Male	86	28,12	7,876	,576	286	0,565
	Female	202	27,50	8,525			
Perception of Competition	Male	86	23,37	4,703	-1,448	286	0,149
	Female	202	24,27	4,919			
Courage	Male	86	112,68	17,663	-1,161	286	0,247
	Female	202	115,55	20,051			

Table 3 presents the results of independent samples t-tests conducted to examine gender differences in Total Mental Training, Perception of Threat, Perception of Competition, and Courage among basketball players. The analyses revealed no statistically significant differences between male and female players across all measured variables. Specifically, for Total Mental Training, males (M = 77.25, SD = 9.03) did not differ significantly from females (M = 77.81, SD = 12.35), t(286) = −0.426, p = .671. Similarly, no significant differences were found in Perception of Threat (males: M = 28.12, SD = 7.88; females: M = 27.50, SD = 8.53), t(286) = 0.576, p = .565; Perception of Competition (males: M = 23.37, SD = 4.70; females: M = 24.27, SD = 4.92), t(286) = −1.448, p = .149; or Courage (males: M = 112.68, SD = 17.66; females: M = 115.55, SD = 20.05), t(286) = −1.161, p = .247. These findings suggest that gender does not significantly influence the levels of mental training, perception of threat and competition, or courage among competitive basketball players in this sample.

Table 4

Independent Samples T-Test Results for Athletic Level Differences

Scales	Sports Level	N	M	SD	t	df	p
Total Mental Training	Professional	234	77,51	10,495	-0,330	286	0,743
	Amateur	54	78,22	14,995			
Perception of Threat	Professional	234	27,33	8,272	-1,535	286	0,126
	Amateur	54	29,25	8,463			
Perception of Competition	Professional	234	24,08	4,631	0,538	286	0,591
	Amateur	54	23,68	5,810			
Courage	Professional	234	113,97	19,165	-1,314	286	0,190
	Amateur	54	117,81	20,193			

When the participants' mental training levels were examined according to the athletic level variable in Table 4, it was determined that there was no significant difference in the total score (t(286)=-0.330, p>0.05). When examining the threat perception levels and the athletic level variable, it was found that there was no significant difference in the total score (t(286)=-1.535, p>0.05). Similarly, when the competition perception levels and the athletic level variable were examined, no significant difference was found in the total score (t(286)=0.538, p>0.05). Lastly, when examining the courage levels and the athletic level variable, no significant difference was found in the total score (t(286)=-1.314, p>0.05).

Table 5

One-Way ANOVA Results for Years of Sports Participation on Psychological Variables

Scales	Year of Sports	N	M	SD	df	f	p
Total Mental Training	1-3 years	67	77,671	10,158			
	4-6 years	77	77,948	10,901	3		
	7-9 years	62	78,983	9,602	284	0,660	0,578
	10 years and above	82	76,329	14,000	287		
	Total	288	77,645	11,446			
Perception of Threat	1-3 years	67	27,582	6,715			
	4-6 years	77	26,129	8,839	3		
	7-9 years	62	27,790	8,706	284	1,801	0,147
	10 years and above	82	29,182	8,602	287		
	Total	288	27,694	8,328			
Perception of Competition	1-3 years	67	24,059	4,795			
	4-6 years	77	23,857	5,038	3		
	7-9 years	62	24,500	4,626	284	0,324	0,808
	10 years and above	82	23,731	4,991	287		
	Total	288	24,006	4,865			
Courage	1-3 years	67	111,417	21,308			
	4-6 years	77	115,636	16,115	3		
	7-9 years	62	114,596	19,475	284	0,952	0,416
	10 years and above	82	116,561	20,465	287		
	Total	288	114,694	19,384			

1= 1-3 yıl / 2=4-6 yıl / 3=7-9 yıl / 4=10 years and above/ p<0,05

Table 5 presents the results of one-way Analysis of Variance (ANOVA) conducted to examine the effects of years of sports participation on four psychological variables: Total Mental Training, Perception of Threat, Perception of Competition, and Courage among competitive basketball players. The participants were categorized into four groups based on their years of sports participation: 1–3 years, 4–6 years, 7–9 years, and 10 years and above.

For Total Mental Training, the mean scores across the groups were 77.67 (SD = 10.16) for 1–3 years, 77.95 (SD = 10.90) for 4–6 years, 78.98 (SD = 9.60) for 7–9 years, and 76.33 (SD = 14.00) for 10 years and above. The ANOVA revealed no significant differences among the groups, $F(3, 284) = 0.660$, $p = .578$. In the case of Perception of Threat, the mean scores were 27.58 (SD = 6.71), 26.13 (SD = 8.84), 27.79 (SD = 8.71), and 29.18 (SD = 8.60) for the respective groups. The ANOVA indicated no significant differences, $F(3, 284) = 1.801$, $p = .147$. Regarding Perception of Competition, the mean scores were 24.06 (SD = 4.80), 23.86 (SD = 5.04), 24.50 (SD = 4.63), and 23.73 (SD = 4.99). The one-way ANOVA showed no significant differences among the groups, $F(3, 284) = 0.324$, $p = .808$. Lastly, for Courage, the mean scores were 111.42 (SD = 21.31), 115.64 (SD = 16.12), 114.60 (SD = 19.48), and 116.56 (SD = 20.47). The ANOVA results indicated no significant differences across the groups, $F(3, 284) = 0.952$, $p = .416$.

These findings suggest that the number of years participants have engaged in sports does not significantly influence their levels of mental training, perception of threat and competition, or courage within this sample of competitive basketball players.

Table 6

Correlation Analysis of Mental Training and Psychological Variables in Basketball Players

Scales		Total Mental Training	Perception of Threat	Perception of Competition	Courage
Total Mental Training	r	1	,013	,405**	,220**
	p		,828	,000	,000
	n	288	288	288	288
Perception of Threat	r	,013	1	-,087	,282**
	p	,828		,142	,000
	n	288	288	288	288
Perception of Competition	r	,405**	-,087	1	,397**
	p	,000	,142		,000
	n	288	288	288	288
Courage	r	,220**	,282**	,397**	1
	p	,000	,000	,000	
	n	288	288	288	288

** Expresses significance / p<0,05

Table 6 presents the Pearson correlation coefficients (r) and corresponding p-values (p) for the relationships between Total Mental Training, Perception of Threat, Perception of Competition, and Courage among 288 competitive basketball players.

The analysis reveals that Total Mental Training is significantly positively correlated with both Perception of Competition ($r = .405$, $p < .001$) and Courage ($r = .220$, $p < .001$), indicating that higher levels of mental training are associated with greater perceptions of competition and higher courage levels. Additionally, Perception of Threat shows a significant positive correlation with Courage ($r = .282$, $p < .001$), suggesting that athletes who perceive higher threats also exhibit higher levels of courage.

Conversely, the correlation between Total Mental Training and Perception of Threat is not statistically significant ($r = .013$, $p = .828$), nor is the relationship between Perception of Threat and Perception of Competition ($r = -.087$, $p = .142$). These findings indicate that mental training does not significantly influence athletes' perception of threats in their sport, and perceptions of threat and competition are not significantly related.

Overall, the significant positive correlations underscore the importance of mental training in enhancing competitive perception and courage among basketball players, while the non-significant relationships highlight areas where mental training may not directly impact certain psychological perceptions.

DISCUSSION & CONCLUSION

According to the findings of the study, when the mental training levels of the participants were examined based on the gender variable, no significant difference was found in the overall scores. In their study, Erman et al. (2023) also found that the gender factor did not result in a significant difference in mental training levels. In the study by Çelik and Güngör (2020), although the average scores were higher for men, no statistically significant difference was found between gender and mental training levels. Similarly, Karaca and Gündüz (2021) also found no significant difference between gender and mental training levels in another study. However, some studies contradict these findings. In the study by Cankurtaran (2020), a

statistically significant difference was found in the self-talk sub-dimension of mental training, with the difference clearly in favor of male participants.

When the mental training levels of the participants were examined according to the athletic level variable, no significant difference was found in the total score. In their study, Erdoğan and Gülşen (2020) found significant differences in the sub-dimensions of mental training based on athletic level. In a study by Keskin et al. (2020), it was concluded that professional athletes had higher mental training levels compared to amateur athletes. On the other hand, Güvendi and Pehlivan (2020) found no statistically significant difference between athletic level and mental training level. Erman et al. (2023) found a significant difference between athletic level and mental training level, with the difference favoring professional athletes. It is clear from a review of the literature that there are studies both consistent and inconsistent with the present research. These differences are thought to be due to socio-cultural factors and the demographic characteristics of the study populations.

In this study, no significant difference was found in the total mental training scores according to the number of years of sports participation. Erman et al. (2023) concluded that as the number of years of sports participation increased, so did mental training levels. In the study by Öner and Cankurtaran (2020), it was found that the number of years of sports participation had an effect on mental training levels, with athletes who had participated for longer years having higher mental training levels than those with fewer years. Similarly, Kara and Hoşver (2019) found that as the number of years of sports participation increased, significant differences were observed in the sub-dimensions of mental training, with the differences favoring athletes with more years of experience. Doğan (2019), on the other hand, found no significant difference between mental training levels and the number of years of sports participation. Cebeci et al. (2019) also found no correlation between the number of years of sports participation and mental training levels.

In the study, when the statistics between the threat perception sub-dimension of the competition and threat perception scale and the gender variable were examined, no significant difference was found in the total score. No significant difference was found in the total score between the competition perception sub-dimension and the gender variable. In the study by Karaca and Gündüz (2021), no significant difference was found between competition and threat levels and gender. Erman et al. (2023) also found no significant difference between gender and competition and threat levels in their study. Jones (2002) also found no significant result between competition and threat levels and gender.

When the threat perception levels and athletic level variable were examined, no significant difference was found in the total score. When the competition perception levels and athletic level variable were examined, no significant difference was found in the total score. In their study, Türkyılmaz and Altıntaş (2020) found a significant difference between competition and threat levels and athletic level, with the difference favoring professional athletes. Similarly, Erman et al. (2023) found significant results in favor of professional athletes regarding competition and threat levels and athletic level.

No significant difference was found in the threat perception subscale scores of the participants. No significant difference was found in the competition perception sub-dimension scores of the participants. In their study, Erman et al. (2023) found statistically significant differences between competition and threat levels and sports participation levels. It can be said that the advantage of older athletes in sports may explain this difference.

When the statistics for the courage scale were examined, no significant difference was found between the courage level and the gender variable. In his master's thesis, Kaya (2018) found no significant difference between gender and courage levels. Similarly, Can and Kaçay (2016) found no significant difference between gender and courage levels in their study.

When the courage levels and athletic level variable of the participants were examined, no significant difference was found in the total score. In his study, Konter (2015) found no significant difference between athletic level and courage, with the difference indicating that national/professional athletes take fewer risks compared to non-professional athletes. Similarly, Can and Kaçay (2016) found no significant results between individual or team athletes and their courage levels in their study.

No statistically significant difference was found in the total courage scores of the participants. In their study, Güvendi et al. (2018) found a statistically significant positive relationship between the number of years of sports participation and courage levels. However, Kaya (2018) found no statistically significant difference between the number of years of sports participation and courage levels in his master's thesis.

When the correlation analysis results between the scales applied to the participants were examined, a low positive correlation was found between total mental training score and threat perception, a high positive correlation with competition perception, and a positive correlation with courage. Considering these relationships, our study findings suggest that as mental training levels increase, basketball players' competition and courage levels also increase. When examining the correlation analysis results between the scales applied to the participants, a low positive relationship was found between threat perception and mental training, a low negative relationship with competition perception, and a high positive relationship with courage. Based on these relationships, it can be observed that as the level of threat increases, the level of courage also increases. When the correlation analysis results between the scales were examined, a high positive relationship was found between competition perception and mental training, a low negative relationship with threat perception, and a high positive relationship with courage. Based on these relationships, it can be observed that as the level of competition increases, the level of courage also increases.

Finally, when examining the correlation analysis results, a high positive relationship was found between courage levels and mental training, a high positive relationship with threat perception, and a high positive relationship with competition perception. Considering these relationships, it can be observed that as the level of courage increases, the levels of competition and threat perception also increase.

In conclusion, mental training has positive effects on basketball players' competition, threat perception, and courage levels. Therefore, incorporating mental training programs into basketball teams' training routines and ensuring that managers and coaches prioritize these programs are believed to contribute positively to both individual and team performance.

Recommendation

Athletes can be provided with individual mental training coaches, providing support tailored to their individual needs. This enables athletes to cope more effectively with their unique challenges.

Basketball teams should regularly implement mental training programs to increase the mental toughness of their players.

Coaches and sports psychologists should emphasize the importance of mental training and inform athletes about it. Athletes can use these techniques more effectively by being informed about the benefits of mental training.

Monitoring the effects of mental training and providing regular feedback helps athletes evaluate their progress. This increases the effectiveness of training programs and allows for necessary adjustments to be made.

As a result, it is seen that mental training has positive effects on basketball players' perceptions of struggle and threat and courage levels. Therefore, it is of great importance to include mental training programs in the training routines of basketball teams.

Based on the findings, several recommendations are proposed to formulate a more effective strategy in the realm of knowledge and information management. These include conducting information management processes more systematically within organizations, incorporating relevant topics into management training programs, and organizing in-service training sessions for current managers. Furthermore, fostering organizational memory, creating a culture that encourages knowledge sharing, enhancing knowledge sensitivity, and providing postgraduate education opportunities for staff may significantly strengthen information management practices and cultivate a robust organizational culture.

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