



STUDENTS OF THE FACULTY OF SPORTS SCIENCES E-SPORTS LITERACY STATUS AND E-SPORTS EXAMINING PARTICIPATION MOTIVATIONS

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Abstract:

The primary objective of this research is to determine the relationship between e-sports literacy levels and participation motivations of students at the Faculty of Sport Sciences, who are the prospective professionals of the digitalizing sports industry, and to analyze how these variables differ according to demographic factors. A total of 296 volunteer students (126 females, 170 males) studying at Erciyes University during the 2024-2025 academic year participated in this study, which employed a relational survey model. Data were collected using the “E-sports Literacy Scale” and the “E-sports Participation Motivation Scale” and evaluated through t-test, ANOVA, and Pearson Correlation analyses. Findings indicate that the participants' e-sports literacy ($=3.33$) and motivation ($=2.88$) levels are above the medium threshold. On the basis of gender, technical literacy and intrinsic motivation scores of male students were found to be significantly higher ($p<0.05$); furthermore, it was determined that an increase in age and years of e-sports experience positively affects literacy levels. As a result of the analysis, a positive and moderately significant relationship was identified between e-sports literacy and participation motivation ($r=0.490$; $p<0.01$). In conclusion, it is observed that as students' cognitive competencies in the field of e-sports increase, their motivation to participate

also strengthens. Accordingly, it is recommended that sport sciences curricula be updated to encompass the technical and academic dimensions of e-sports.

Keywords: game, digital game, e-sport, motivation

1. Introduction

Play is recognized as a fundamental domain of activity for children, particularly in terms of their cognitive, social, and motor development. Accessible, versatile, and enjoyable games suited to a child's age and developmental stage contribute significantly to the acquisition of essential skills such as problem-solving, exploration, reasoning, communication, sharing, coordination, balance, and self-regulation (Kennedy-Behr et al., 2015; Lillard et al., 2013). In this regard, play is evaluated not merely as a means of entertainment but as a critical learning environment that fosters development. Furthermore, playful behavior is not an activity exclusive to childhood; it is a fundamental motivational sphere that individuals sustain in evolving forms throughout their lives. Digital games allow play-based motives formed during childhood to be maintained through technology into adulthood (Fromme & Unger, 2012). Parallel to technological advancements, play materials and environments have undergone a transformation; through video and computer games, numerous activities—both possible and impossible in real life—have begun to be offered to individuals in virtual environments within an interactive and competitive framework (Akgöl, 2019; Mustafaoğlu, 2018). With the widespread availability of internet access, digital games have transformed into social experience spaces where dimensions of interaction, competition, and cooperation among players are strengthened.

Historically, it is observed that play and the materials utilized during play have diversified in accordance with technological progress (Inan & Dervent, 2016). As internet access became ubiquitous, these games acquired an interactive structure, enhancing the levels of competition and collaboration between participants. As a natural consequence of this transformation process, the concept of "e-sports," which encompasses competition-based digital games, has emerged. The COVID-19 pandemic, which had a global impact, significantly increased interest in e-sports as individuals spent more time at home. Indeed, the substantial surge in video game sales in 2020 is considered a concrete indicator of this heightened interest (KPMG, 2020).

E-sports is a form of sports where the fundamental aspects of the discipline are facilitated through electronic systems; the inputs of players and teams, as well as the outputs of the system, are mediated via human-computer interfaces. In practical terms, these are competitive video games broadcast over the internet (Hamari & Sjöblom, 2017). E-sports hosts major national and international leagues and organizations while being governed by administrative bodies such as e-sports federations (Jenny et al., 2017). In order to regulate and develop e-sports activities in Turkey, the Turkish E-Sports Federation was established under the Ministry of Youth and Sports in 2018 (TESFED,

2018). This development represents a significant turning point for the official recognition of e-sports as a sporting discipline at the national level.

The rapid growth observed in the field of e-sports in recent years has paved the way for a broad and heterogeneous participant base that transcends traditional demographic boundaries such as age, gender, and socio-economic status. However, despite its rapid proliferation in popular culture, its representation in academic literature remains relatively limited. In particular, it is observed that studies regarding the motivational factors and participation goals that direct individuals toward the e-sports ecosystem have not been addressed with sufficient depth. In this context, examining the knowledge levels, e-sports literacy, and participation motivations of Faculty of Sport Sciences students—who receive traditional sports education—emerges as a critical research necessity. The aim of this study is to determine the e-sports literacy levels of Faculty of Sport Sciences students, to reveal the primary motivational sources influencing their participation in e-sports activities, and to examine the relationships between these variables in terms of various demographic factors.

2. Material and Methods

The present study employed a relational survey model, a quantitative research approach, and was conducted following the ethical approval granted by the Erciyes University Social and Human Sciences Ethics Committee (Decision No: 2024/163 dated 29.04.2025). The research population consisted of 1,404 students enrolled at the Erciyes University Faculty of Sport Sciences during the 2024-2025 academic year, from which a representative sample of 296 volunteers was selected using the simple random sampling method, ensuring a 95% confidence level and a 5% margin of error. Data collection was performed via a three-part survey comprising a personal information form, the 9-item "E-sport Literacy Scale," and the 22-item "E-sport Participation Motivation Scale". Reliability analyses conducted on the current sample yielded Cronbach's Alpha coefficients of .907 for the E-sport Literacy Scale and .889 for the E-sport Participation Motivation Scale, confirming high internal consistency. Statistical analyses were performed using SPSS 25 software. Given that the skewness and kurtosis coefficients ranged between -1 and +1, the data were determined to be normally distributed, justifying the use of parametric tests. Accordingly, t-tests, one-way analysis of variance (ANOVA), and correlation analyses were utilized at a significance level of $p < 0.05$.

2.1 Data Collection Techniques and Tools

2.1.1 E-sports Literacy Scale

To develop the E-sports Literacy, E-sports Career, and E-sports Activity Quality scales, existing scales and items in the literature identified as relevant to these topics were systematically reviewed. Based on this review, an item pool was established, consisting of 55 items for the E-sports Literacy Scale, 57 items for the E-sports Career Scale, and 49 items for the E-sports Activity Quality Scale. Data collection was completed over

approximately eight months, reaching a sample size of 487 for the E-sports Literacy Scale, 479 for the E-sports Career Scale, and 480 for the E-sports Activity Quality Scale to perform the necessary analyses. In the selection of the sample, support was obtained from university e-sports clubs, e-sports centers located within youth centers, and participants of national e-sports tournaments (Saraçoğlu, 2024).

2.1.2 Participatory Motivation Scale for E-Sports

The "Participatory Motivation Scale for E-Sports" (PMSES), developed by Gül, Gül, and Uzun (2019) to determine the participation motivations of e-sports athletes, is a valid and reliable measurement instrument. The scale consists of 22 items distributed across three sub-dimensions:

- **Intrinsic Motivation to Know and Accomplish (F1):** Comprising 13 items (Items 1, 2, 3, 7, 8, 9, 12, 14, 15, 16, 19, 21, and 22).
- **External Regulation (F2):** Comprising 5 items (Items 4, 5, 11, 18, and 20).
- **Identification (F3):** Comprising 4 items (Items 6, 10, 13, and 17).

The scale is designed as a 5-point Likert-type scale (ranging from 1: "Strongly Disagree" to 5: "Strongly Agree") and contains no reverse-coded items. Evaluation of the scale can be conducted based on the arithmetic mean or the total score, both for the overall instrument and specifically for the sub-dimensions. The overall Cronbach's Alpha internal consistency coefficient of the scale was determined to be 0.972, indicating a high degree of reliability (Gül, Gül and Uzun, 2019).

2.2 Data Analysis

Prior to analysis, incomplete or incorrectly completed surveys were excluded from the dataset, and the refined data were analyzed using SPSS 25 software. Descriptive statistics, including arithmetic mean, standard deviation, frequency, and percentage distributions, were utilized for demographic variables and group-related questions. The normality of the data distribution was assessed via skewness and kurtosis coefficients, which were found to be within the range of -1 to +1. According to Haşiloğlu and Çiftçiler (2023), as this range indicates a normal distribution, parametric tests were preferred for the analyses. Within this framework, t-tests and One-Way Analysis of Variance (ANOVA) were employed for group comparisons, while correlation analysis was conducted to examine the relationships between total scale scores and sub-dimension scores. For all statistical analyses, the significance level was set at $p < 0.05$.

3. Results

In this section, the results of the statistical analyses conducted on the data obtained from the study are presented. First, descriptive findings related to the participants' demographic characteristics and the mean scores of the scales are reported; subsequently, the results of the other statistical analyses carried out within the scope of the research are detailed.

Table 1: Distribution of Participants' Demographic Characteristics

Variables	Groups	N	%
Gender	Female	126	42,6
	Male	170	57,4
Age	18-19 years	46	15,5
	20-21 years	141	47,6
	22+ years	109	36,8
Department	Teaching	101	34,1
	Administration	65	22,0
	Coaching	78	26,4
	Recreation	52	17,6
E-sports Experience	1-3 Years	164	55,4
	4-6 Years	55	18,6
	7+ Years	77	26,0
Total		296	100,0

The demographic characteristics of the students participating in the study are presented in Table 1. An examination of the table indicates that 57.4% of the participants were male, while 42.6% were female. With regard to age distribution, the highest proportion of participants (47.6%) fell within the 20–21 age group, followed by those aged 22 years and above (36.8%). In terms of academic departments, 34.1% of the participants were enrolled in Physical Education and Sports Teaching, 26.4% in Coaching, 22.0% in Sports Management, and 17.6% in Recreation. Regarding e-sports experience, more than half of the participants (55.4%) reported having 1–3 years of experience, whereas 26.0% had seven years or more of experience.

3.1 Gender Variable

An Independent Samples t-test was conducted to determine whether there was a statistically significant difference between participants' e-sports literacy and motivation levels according to gender. The results of the analysis are presented in Table 2.

Table 2: Independent Samples t-Test Results of Participants' Scores According to Gender

	Subdimensions	Gender	N	M	SD	T	P
ELS	Technical	Female	126	3.07	0.88	-4.476	.000*
		Male	170	3.53	0.86		
	General	Female	126	3.05	0.82	-4.633	.000*
		Male	170	3.50	0.83		
PMSES	Intrinsic Motivation	Female	126	3.07	0.73	-3.584	.000*
		Male	170	3.40	0.83		
	External Regulation	Female	126	2.31	0.72	1.009	.273
		Male	170	2.21	0.87		
	Identification	Female	126	2.13	0.71	1.979	.049*
		Male	170	1.94	0.93		

3.2 Years of Experience Variable

A One-Way Analysis of Variance (ANOVA) was conducted in Table 3 to determine whether there were significant differences between participants' mean scores based on their e-sports experience levels (1–3 years, 4–6 years, and 7 years or more). To identify the specific source of the differences, the Tukey post-hoc test was utilized for multiple comparisons.

Table 3: ANOVA Results of Participants' Scores According to Years of Experience

	Subdimensions	Experience Groups	N	M	SD	F	P	Difference (Tukey)
ELS	General	(1-3 years) ^a	164	2.99	0.75	37.518	0.000*	b>a c>a
		(4-6 years) ^b	55	3.66	0.60			
		(7+ years) ^c	77	3.80	0.80			
	Technical	(1-3 years) ^a	164	2.98	0.75	41.660	0.000*	b>a c>a
		(4-6 years) ^b	55	3.77	0.64			
		(7+ years) ^c	77	3.88	0.78			
PMSES	Intrinsic Motivation	(1-3 years) ^a	164	2.96	0.64	28.750	0.000*	b>a c>a
		(4-6 years) ^b	55	3.63	0.91			
		(7+ years) ^c	77	3.61	0.80			
	External Regulation	(1-3 years) ^a	164	2.14	0.75	4.787	0.009*	c>a
		(4-6 years) ^b	55	2.31	0.80			
		(7+ years) ^c	77	2.48	0.90			
	Identification	(1-3 years) ^a	164	2.04	0.83	1.086	0.339	-
		(4-6 years) ^b	55	1.91	0.87			
		(7+ years) ^c	77	2.02	0.87			

- **E-Sports Literacy:** Significant differences were identified in the 'general knowledge' and 'technical knowledge' subscales based on the years of experience variable.
- **E-Sports Participation Motivation:** Regarding the experience variable, statistically significant differences were observed in the 'intrinsic motivation' and 'extrinsic regulation' subdimensions; however, no significant difference was found in the 'identified regulation' dimension.

No statistically significant difference was detected between the 4–6 years of experience group and the group with 7 years or more ($p > .05$). This suggests that development in e-sports literacy and motivation increases rapidly during the first four years, reaching a plateau thereafter, where further growth follows a horizontal trend.

3.3 Age Variable

A One-Way Analysis of Variance (One-Way ANOVA) was conducted to determine whether there were statistically significant differences in participants' E-sports Literacy and E-sports Participation Motivation scores across different age groups. The results of the analysis are presented in Table 4.

Table 4: ANOVA Results of Participants' Scores According to the Age Variable

	Subdimensions	Age	N	M	SD	F	P	Difference (Tukey)
ESL	Technical	(18-19) ^a	46	3.38	0.79	3.581	.029*	c>b
		(20-21) ^b	141	3.19	0.87			
		(22+) ^c	109	3.50	0.95			
	General	(18-19) ^a	46	3.27	0.63	2.168	.116	-
		(20-21) ^b	141	3.21	0.84			
		(22+) ^c	109	3.44	0.94			
PMSES	Intrinsic Motivation	(18-19) ^a	46	3.41	0.83	5.736	.004*	a>b c>b
		(20-21) ^b	141	3.10	0.78			
		(22+) ^c	109	3.41	0.79			
	External Regulation	(18-19) ^a	46	2.16	0.78	.467	.627	-
		(20-21) ^b	141	2.25	0.84			
		(22+) ^c	109	2.30	0.78			
	Identification	(18-19) ^a	46	1.77	0.73	2.731	.067	-
		(20-21) ^b	141	2.04	0.86			
		(22+) ^c	109	2.11	0.85			

- **E-Sports Literacy (ESL) Findings:** When the e-sports literacy levels of the participants were examined according to age groups; a statistically significant difference was detected between the groups in the technical literacy dimension [F (2,293) = 3.581; p < .05]. According to the test results conducted; it was observed that the technical literacy scores of the participants in the 22+ age group ($\bar{X}$ = 3.50) were significantly higher than those of the participants in the 20-21 age group ($\bar{X}$ = 3.19). On the other hand, no significant difference was found between the age groups in the general literacy dimension [F (2,293) = 2.168; p > .05].
- **E-Sports Participation Motivation (ESPM) Findings:** As a result of the analysis of e-sports participation motivation sub-dimensions according to the age variable, the following findings were reached:
 - **Intrinsic Motivation:** A significant difference was detected between age groups in terms of intrinsic motivation levels [F (2,293) = 5.736; p < .05]. Test results indicate that the intrinsic motivation scores of the 20-21 age group ($\bar{X}$ = 3.10) are significantly lower than those of both the 18-19 ($\bar{X}$ = 3.41) and 22+ ($\bar{X}$ = 3.41) age groups.
 - **External Regulation and Identification:** No statistically significant difference was detected in the external regulation [F (2,293) = .467; p > .05] and identification [F (2,293) = 2.731; p > .05] motivation scores of the participants according to age groups.

3.4 Department Variable

One-Way Analysis of Variance (One-Way ANOVA) was conducted to determine whether there was a significant difference between the E-Sports Literacy and E-Sports Participation Motivation scores according to the departments in which the participants

studied (Physical Education and Sports Teaching, Sports Management, Coaching, Recreation), and the results are presented in Table 5.

Table 5: ANOVA Results of Participants' Scores According to the Department of Study Variable

	Departments	N	M	SD	F	P	Difference (Tukey)
ELS	Teaching	101	3.42	0.78	1.692	0.169	-
	Management	65	3.41	0.81			
	Coaching	78	3.17	0.88			
	Recreation	52	3.26	0.84			
PMSES	Teaching	101	2.86	0.63	0.324	0.808	-
	Management	65	2.94	0.67			
	Coaching	78	2.87	0.62			
	Recreation	52	2.84	0.60			

When the analysis results were examined, no statistically significant difference was found among the groups according to the department variable ($p > .05$). In terms of E-sports Literacy scores, students enrolled in the Physical Education and Sports Teaching department had the highest mean score ($\bar{X} = 3.42$), while the lowest mean score was observed among students in the Coaching department ($\bar{X} = 3.17$); however, this difference did not reach statistical significance ($F = 1.692$; $p = .169$).

Similarly, no statistically significant difference was found among departments in E-sports Participation Motivation scores ($F = 0.324$; $p = .808$), indicating that students' motivation levels were similar regardless of their department of study.

4. Discussion

4.1 Gender Variable

The findings suggest that women maintain their participation through identification-based motivation. This indicates that, despite being a numerical minority within the e-sports ecosystem, women associate this activity more deeply with their self-identity during their involvement. According to the research conducted by Mustafaoğlu et al. (2018), it is observed that the majority of individuals engaged in e-sports, at both amateur and professional levels, are male. Supporting this finding, Akın (2008) reported that 93.1% of e-sports players consist of male participants. In the study carried out by Ecevit et al. (2018), the higher interest of men in computer games compared to women was interpreted as a concrete indicator of a significant difference based on the gender variable in e-sports. Similarly, Tang et al. (2021) identified statistically significant differences in their study involving both men and women. Conversely, the research findings of Uzuner and Kahveci (2023) concluded that women exhibit superiority in terms of competence. In another study, İlhan and Gencer (2013) emphasized that gender does not have an impact on motivation for sports participation. It has been determined that men's motivation for participation is higher than that of women, as men perceive e-sports as a form of entertainment, whereas women view it as a method of escaping daily stress. This finding

aligns with the historical coding of e-sports and digital gaming culture as a "male-dominated" domain. Numerous studies in the literature have revealed that men start playing digital games at an earlier age, have longer play durations, and show a greater interest in competitive game genres. This situation explains why men possess a better command of gaming terminology and mechanics (literacy) and exhibit higher motivation in this field.

4.2 Years of Experience Variable

Another significant variable addressed in the study is the years of e-sports experience. As a result of the analyses, it was determined that both e-sports literacy and participation motivation levels increase in parallel with the duration of experience. The scores of novice participants with 1–3 years of experience are significantly lower than those with 4–6 years and 7 or more years of experience. For individuals newly introduced to e-sports, the processes of learning game dynamics, developing strategies, and adapting to the competitive environment take time. As the duration of experience increases, individuals' mastery of the game (literacy) improves, and this mastery brings about a sense of achievement and the desire to continue playing (motivation). These results align with findings in the literature suggesting that digital gaming and e-sports experience enhance individuals' cognitive, technical, and strategic competencies. Hamari and Sjöblom (2017) state that e-sports experience improves not only in-game performance but also the level of knowledge, awareness, and strategic thinking skills regarding the game. Similarly, Jenny et al. (2018) express that individuals with long-term e-sports experience have a better grasp of the rules of the gaming ecosystem, the functions of roles, and competitive dynamics. This situation supports the fact that the duration of experience has a direct impact on e-sports literacy.

The findings obtained regarding the motivation for e-sports participation also demonstrate parallelism with the existing literature. The higher motivation levels observed in individuals with long-term experience can be explained particularly within the framework of Self-Determination Theory. Ryan and Deci (2000) emphasize that as individuals develop feelings of competence, autonomy, and relatedness in an activity, their intrinsic motivation increases. In this context, the increased sense of competence, better adaptation to the competitive environment, and the establishment of social bonds as e-sports experience grows can be considered fundamental elements that strengthen participation motivation.

Furthermore, the limited difference in certain variables between the groups with 4–6 years and 7 or more years of experience suggests that the rate of increase in e-sports-related outcomes may decelerate after reaching a certain threshold of experience. This situation implies that the quality of experience (such as the level of competition, team experience, and tournament participation) may be more decisive than its mere quantity. On the other hand, the absence of a significant difference between the 4–6 years and 7 or more years of experience groups in our study ($p > 0.05$) is explained in the literature through the learning curve approach, which demonstrates that while rapid development

is observed during the initial years of experience, gains may become more limited in subsequent years.

4.3 Age Variable

The research results indicate that the **age variable** exerts a selective influence on technical e-sports literacy and intrinsic motivation dimensions, rather than a broad impact on overall literacy and participation motivation. According to the findings, particularly in the technical dimension of e-sports literacy, participants aged 22 and over scored significantly higher than those in the 20–21 age range. This situation suggests that as age progresses, individuals' experience, technical knowledge, and awareness regarding e-sports increase. Similarly, in the dimension of intrinsic motivation, the motivation levels of the 18–19 and 22+ age groups were found to be higher than those of the 20–21 age group. This result demonstrates that academic and social life dynamics may create varying effects on motivation during certain age periods. On the other hand, the absence of a significant difference in external regulation and identified regulation dimensions reveals that age is not a decisive variable for these specific types of motivation. Overall, it can be concluded that age has a selective effect particularly on technical literacy and intrinsic motivation; however, this effect is not reflected equally across all motivation and literacy dimensions. This finding aligns with studies in the literature stating that awareness and experience in the e-sports field may increase with age, supporting the idea that long-term interaction with e-sports contributes to individuals' cognitive and motivational levels. In a study by Üstün et al. (2022), evaluating e-sports participation motivation by age, a statistically significant difference was observed in favor of participants aged 23 and over compared to younger participants in the taxonomic domain and competence sub-dimensions. When the study conducted by Yıldız et al. (2020) is examined, it is stated that individuals aged 18–22 highlight their personal skills through e-sports and that developing these skills can positively affect games in daily life. Conversely, in contrast to our research findings, Kolçak (2020) reported no significant difference between the age variable and participation in digital games or physical activity.

4.4 Department Variable

When examined in terms of the **academic major**, which is one of the demographic variables of the study, no statistically significant difference was identified among the departments of Physical Education and Sports Teaching, Coaching Education, Sport Management, and Recreation in terms of e-sports literacy and participation motivation levels. A review of the literature reveals that in the study conducted by Birlik and Yaraş (2025), no statistically significant difference was found among students' departments regarding digital literacy levels, sub-dimensions, and total scores. This finding is supportive of the results obtained in our research.

On the other hand, a study conducted by Kaya (2025) determined that Physical Education and Sports Teaching students exhibited higher cognitive, affective, and

behavioral attitudes toward e-sports compared to students in other departments. Furthermore, it was observed that the behavioral attitudes of Coaching Education students were significantly higher than those of Sport Management students.

5. Conclusion

In this study, the relationship between the e-sports literacy levels of students in the Faculty of Sport Sciences and their e-sports participation motivation was examined, and it was revealed whether these variables differ according to various demographic factors. The findings indicated that students' e-sports literacy levels were above moderate, while their participation motivation was at a moderate level; furthermore, a positive and moderately significant correlation was identified between e-sports literacy and participation motivation. Regarding the gender variable, it was determined that male students had higher scores in technical and general literacy as well as intrinsic motivation dimensions, whereas female students stood out in the dimension of identified motivation. It was observed that both e-sports literacy and participation motivation increased as the years of experience grew; however, this increase could become limited after a certain level of experience. It was concluded that the age variable did not show a general effect across all dimensions but rather had a selective impact on technical e-sports literacy and intrinsic motivation. The absence of a significant difference in terms of the academic major suggests that e-sports possesses an interdisciplinary structure within the field of sports sciences. Taken together, this study demonstrates that e-sports is not merely a recreational activity but a multidimensional field that evolves with knowledge, experience, and motivation, providing a scientific basis for the planning of e-sports-based education, club structures, and youth policies.

6. Recommendations

- It is recommended that courses focusing on e-sports literacy be integrated into the undergraduate and graduate curricula of Faculties of Sport Sciences, enabling students to evaluate e-sports through technical, conceptual, and managerial dimensions.
- Supporting e-sports clubs, teams, and organizational structures within universities may qualitatively enhance students' experiences in this field by increasing their participation motivations.
- Addressing e-sports activities through an interdisciplinary approach involving various disciplines in sport sciences (such as coaching, sport management, recreation, and physical education teaching) will contribute to the academic development of the field.
- In future research, conducting studies with larger and more heterogeneous samples comprising participants from different faculties and universities may increase the generalizability of the findings.

- The use of longitudinal research designs is suggested to reveal the temporal trends and changes in e-sports literacy and participation motivation over time.
- Utilizing qualitative data collection methods (e.g., interviews, focus group discussions) to support quantitative findings may contribute to a deeper understanding of the underlying causes of differences related to gender and years of experience.
- In light of the findings, it is recommended that institutions shaping youth and sports policies evaluate e-sports not merely as a recreational activity but as an educational and developmental field.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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