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The influence of self-efficacy, perceived value, student engagement and competition preparedness of outstanding student election delegates (Pilmapres) in LLDIKTI Region III DKI Jakarta in 2024

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ABSTRACT

This study examines the competition readiness of students participating in the Pemilihan Mahasiswa Berprestasi (Pilmapres) competition under LLDIKTI Region III Jakarta. While earlier research concentrated on career impact and selection tools, this study highlights factors related to student readiness prior to the competition. Data were gathered from 63 participants representing 37 universities between 2021 and 2024 using a quantitative approach and an online survey. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used for the analysis. The results show that perceived value, student engagement, and competition readiness were not significantly affected by self-efficacy. However, perceived value positively impacted both competition readiness and student engagement. Furthermore, although it did not mediate the relationship between preparedness and self-efficacy, student engagement significantly improved competition readiness. These results imply that perceived value is a more important factor than self-efficacy in promoting student engagement and preparedness. The intricacy of Pilmapres may necessitate more thorough preparation techniques than just faith. This study advances the knowledge of student development strategies in competitive academic environments and provides insightful information about the variables affecting students' competition readiness.

Keywords: competition preparedness; perceived value; self-efficacy; student engagement.

1. INTRODUCTION

Human capital is an essential resource for national development, particularly in this fast-paced global age. Investing in human capital is more common in nations with steady economic growth, as it is thought to be essential for maintaining innovation, productivity, and competitiveness (Nkogbu, 2015; Mankiw, 2020). Higher education is the sector that invests the most heavily and critically in human capital development. Through organized academic and extracurricular programs, higher education plays a strategic role in cultivating such potential by improving knowledge, skills, and leadership abilities (Chong, 2008). In Indonesia, one of the most prestigious student development programs is the Pemilihan Mahasiswa Berprestasi (Pilmapres), organized by the Ministry of Education through the LLDIKTI regions. This competition recognizes outstanding students for their academic achievements, leadership, community impact, and communication skills. Over the last three years, LLDIKTI Regions II to VII have consistently produced national Pilmapres winners, while LLDIKTI Region III, despite having the highest number of A-accredited universities, has shown limited success in producing Pilmapres winners. Only one university in Region III reached the top three from 2021 to 2023, as shown in Figure 1. The focus on Region III is justified because of its institutional prominence and concentration of nationally accredited universities, which should theoretically produce more competitive delegates (Sari, 2021). This underperformance, despite such institutional capacity, signals a deeper systemic issue, making Region III a critical case for investigating competition preparedness. See Figure 1

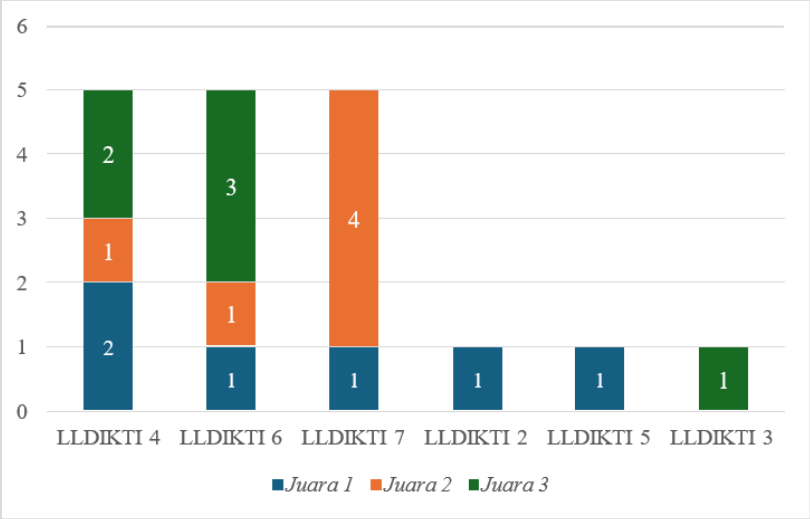

Figure 1. Summary of Pilmapres Winners by LLDIKTI Region (2021–2023)

Source: Processed from primary data (2024)

In terms of the literature gap, most existing studies concentrate on evaluation and selection mechanisms (Cahyani et al., 2019; Putra et al., 2022) rather than exploring the factors that contribute to a delegate's competition readiness. Prior studies related to Pilmapres have mostly focused on decision-making methods to minimize jury bias and enhance ranking objectivity—such as AHP, MOORA, and ANP (Cahyani et al., 2019; Putra et al., 2022)—but lack attention to the delegates' competition preparedness, which is arguably crucial in achieving high performance. There is limited empirical research that integrates psychological and institutional variables, such as self-efficacy, perceived value, and engagement, to explain why some students prepare more effectively than others (Yunita, 2023). Consequently, the current literature does not adequately inform how universities can enhance pre-competition preparedness.

This study seeks to fill a gap in the literature by focusing not only on post-selection outcomes but also on the preparatory process itself. In addition, we investigated the influence of three key psychological and behavioral factors—self-efficacy (Bandura, 1997; Nguyen et al., 2021; Yunita, 2023), perceived value,

which refers to students' belief in the relevance and benefit of the competition (Issa et al., 2022; Amado et al., 2023), and student engagement, which refers to students' active involvement with institutional support systems (Kahu, 2013; Bailey et al., 2023; Gorman, 2021)—on the competition preparedness of Pilmapres delegates from LLDIKTI Region III. A quantitative approach is employed to analyze data from former and current Pilmapres participants (2021–2024) using validated instruments from reputable studies. The main hypothesis is that higher self-efficacy, stronger perceived value, and greater engagement contribute significantly to better competition preparation.

2. METHOD

2.1. Research Design

This study employs a quantitative research design, utilizing a cross-sectional survey to collect primary data from selected participants in the Pemilihan Mahasiswa Berprestasi (Pilmapres) competition. Using statistical methods to analyze and draw conclusions, quantitative research is a proven approach to investigating relationships between variables (Sekaran & Bougie, 2019). This study adopts an associative quantitative design aimed at examining both direct and indirect relationships among self-efficacy, perceived value, student engagement, and competition preparedness. Figure 2 shows the proposed research model.

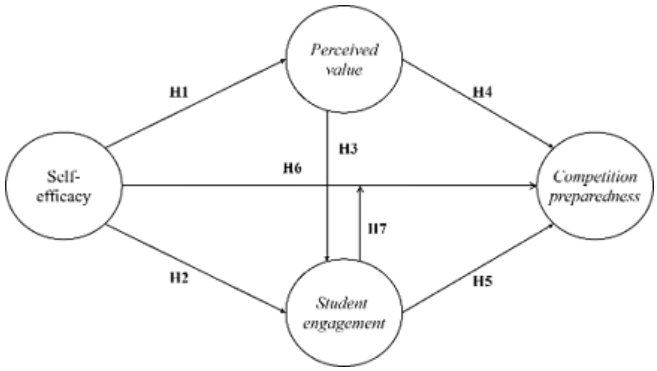

Figure 2. Research Model.

Source: Researcher (2024)

2.2. Participants

This study is based on 160 students who were formally nominated to compete in the Pilmapres competition, which was held by LLDIKTI Region III between 2021 and 2024, on behalf of their respective universities. Purposive sampling was used to select the participants based on their participation in the Pilmapres selection process. Students who actively participated in the competitive process, such as attending training sessions, university-level selection, and presentation simulations, are included in the study's target population. The past tense is appropriate because the procedures described have already been completed.

2.3. Sampling Method

Slovin's formula was used to calculate the sample size in order to guarantee representativeness with a 10% margin of error. The sampling technique, according to Sekaran & Bougie (2019), entailed choosing participants based on particular traits that were thought to be pertinent to the study's objectives. As a result, 62 participants comprised the target sample, which is considered adequate for PLS-SEM analysis (Chin, 1999).

2.4. Data Collection

An online survey, disseminated via Microsoft Forms, was used to gather data. The survey evaluated self-efficacy, student engagement, perceived value, and competition readiness using a Likert scale with 1 denoting "strongly disagree" and 5 denoting "strongly agree." The Likert scale is frequently used to gauge

attitudes, beliefs, and perceptions regarding social phenomena (Sekaran & Bougie, 2019). Before the entire survey was distributed, a pilot test with 30 respondents was carried out to evaluate the instrument's validity and reliability and make sure it would be applicable in the Pilmapres competition (Sugiyono, 2017).

2.5. Instruments

Self-efficacy, student engagement, perceived value, and competition readiness were the four primary variables used in this study. Adapted instruments based on validated and reliable established scales were used to measure each variable: 1) Ten items from Schwarzer & Jerusalem's (1995) General Self-Efficacy Scale (GSE), which evaluated students' confidence in handling competition-related difficulties, were used to measure self-efficacy; 2) Ten items that addressed agentic, emotional, and cognitive aspects of student engagement were modified from Reeve (2013), and Fredricks et al. (2004); 3) The six items in the Perceived Value survey, which were modified from Nguyen et al. (2021) and Issa et al. (2022), represented students' perceptions of the importance and advantages of participating in Pilmapres; 4) Eleven items from Nguyen et al. (2021) and Carver et al. (1989) were modified for Competition Preparedness, incorporating elements of coping strategies, confidence, and strategic planning. The Brief COPE framework served as the basis for a number of indicators.

Pilot testing was done on the finished instruments to make sure they consistently produced results for all participants and measured the intended constructs.

2.6. Data Analysis

Partial Least Squares Structural Equation Modelling (PLS-SEM), a reliable technique for estimating intricate relationships in models with small sample sizes, was used to analyse the data (Chin, 1999). PLS-SEM is good at handling non-normal data, is appropriate for exploratory research, and is strong at developing theories and predictive modeling—particularly in studies with small sample sizes and intricate variable structures—it was selected (Hair et al., 2019). Three stages were involved in the analysis: 1) Assessing the connection between latent variables and their corresponding indicators is known as "outer model evaluation." Sufficient validity is indicated by a factor loading higher than 0.70; 2) Testing for Reliability and Validity: Composite Reliability (CR) was used to evaluate reliability, and Average Variance Extracted (AVE), with a suggested threshold of 0.50 (Fornell & Larcker, 1981), was used to confirm validity; 3) Inner Model Evaluation: Using R-squared values and hypothesis testing, this method assesses the goodness-of-fit of the structural model and the correlation between the variables.

2.7. Confirmation Communication

A confirmation communication process was carried out with chosen participants to increase the findings' depth and legitimacy. This required further conversations to confirm and elucidate answers to the original survey. Incorporating qualitative insight with quantitative data through a complementary mixed-method approach ensured more grounded conclusions and richer interpretation (Pramesti et al., 2022; Rubin & Rubin, 2005).

2.8. Ethical Considerations

The university's ethics review board granted ethical approval. Informed consent forms outlining the goals of the study, the voluntary nature of participation, and the guarantee of confidentiality were given to each respondent.

3. RESULT AND DISCUSSION

3.1. Pilot Testing Result

3.1.1. Initial Construct Validity and Reliability

The pilot test involved 35 student participants from Pilmapres cohorts (2021–2024), with 31 complete and valid responses. This phase aimed to ensure internal consistency and convergent validity of

the questionnaire constructs by analyzing Composite Reliability (CR) and Average Variance Extracted (AVE). See Table 1

Table 1. Construct Reliability and Validity – Overview

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	AVE
Competition_Preparedness	0.896	0.912	0.915	0.502
Perceived_Value	0.831	0.864	0.865	0.338
Self_Efficacy	0.772	0.815	0.832	0.355
Student_Engagement	0.939	0.947	0.945	0.443

Source: Processed by the researcher (2024)

The AVE value of the Competition Preparedness (CP) construct exceeded the recommended threshold (AVE = 0.502), while Self-Efficacy (SE = 0.355), Perceived Value (PV = 0.338), and Student Engagement (SE = 0.443) were below acceptable levels. Thus, item reduction was performed to optimize construct validity.

3.1.2. Recalculated - Student Engagement

The revision process was conducted gradually by eliminating indicators one by one. After eliminating weak indicators based on low outer loading values, the AVE increased from 0.443 to 0.505, with 16 final items retained (Table 2).

Table 2. Recalculate the Student Engagement variable

Outer loadings	Explanation	AVE score results
SE2: 0.526	Eliminating Questionnaire Items SE2	0.451
SE10: 0.532	Eliminating Questionnaire Items SE10	0.461
SE7: 0.538	Eliminating Questionnaire Items SE7	0.472
SE21: 0.546	Eliminating Questionnaire Items SE21	0.481
SE19: 0.554	Eliminating Questionnaire Items SE21	0.492
SE1: 0.580	Eliminating Questionnaire Items SE1	0.505

Source: Processed by the researcher (2024)

Student engagement was measured using 16 items, reduced from the original 22, and distributed to the primary respondents.

3.1.3. Recalculated - Self-Efficacy

The Self-Efficacy construct was refined by retaining only 5 out of 10 initial indicators (Table 3).

Table 3. Recalculate the Self-Efficacy variable

Outer loadings	Explanation	AVE score results
SEF1: 0.138	Eliminating Questionnaire Items SEF1	0.393
SEF2: 0.379	Eliminating Questionnaire Items SEF2	0.432
SEF3: 0.507	Eliminating Questionnaire Items SEF3	0.459
SEF7: 0.528	Eliminating Questionnaire Items SEF7	0.497
SEF10: 0.537	Eliminating Questionnaire Items SEF10	0.555

Source: Processed by the researcher (2024)

3.1.4. Recalculated - Perceived Value

The Perceived Value construct was recalculated by retaining 7 of the original 14 items (Table 4).

Table 4. Recalculate the Perceived Value variable

Outer loadings	Explanation	AVE score results
PV7: 0.028	Eliminating Questionnaire Items PV7	0.363
PV3: 0.305	Eliminating Questionnaire Items PV3	0.389
PV14: 0.413	Eliminating Questionnaire Items PV14	0.413
PV1: 0.491	Eliminating Questionnaire Items PV1	0.436
PV11: 0.525	Eliminating Questionnaire Items PV11	0.456
PV12: 0.551	Eliminating Questionnaire Items PV12	0.485
PV2: 0.585	Eliminating Questionnaire Items PV2	0.520

Source: Processed by the researcher (2024)

3.1.4. Final Construct Validity and Reliability

Table 5. Final Construct Reliability and Validity – Overview

Construct	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	AVE
Competition_Preparedness	0.896	0.912	0.915	0.502
Perceived_Value	0.844	0.855	0.882	0.520
Self_Efficacy	0.798	0.799	0.861	0.555
Student_Engagement	0.933	0.941	0.941	0.504

Source: Processed by the researcher (2024)

All constructs show AVE values above 0.5, indicating sufficient convergent validity. CR values above 0.7 confirm that the constructs are reliable (Table 5). All questionnaire items were tested and distributed to the main respondents in this study.

3.2. Research Process

3.2.1. Data Collection Process

The questionnaire items, which had previously undergone pilot testing, were distributed to all regional-level Pilmapres participants from 2021 to 2024, representing 70 universities under LLDIKTI Region III. Data collection took place from August 14 to 18, 2024, using multiple communication channels. These included mass dissemination by the Belmawa and Student Achievement of LLDIKTI III, email invitations based on participant data provided by LLDIKTI III, WhatsApp groups of Pilmapres participants and LLDIKTI III student affairs staff, and direct messages from the researcher to participants whose phone numbers were available. Additionally, the researcher reached out through participants' social media accounts, including LinkedIn, Instagram, X, Facebook, and Threads. These efforts resulted in a total of 67 responses. Of these, 63 respondents from 37 universities met the criteria and completed the questionnaire, while 4 were excluded based on the filtering question.

3.2.2. Respondent Profile

The respondent profile consists of 63 eligible participants from 37 universities under LLDIKTI Region III. Data were collected from former Pilmapres finalists (2021–2024) through various official and personal channels.

3.2.2.1. Based on University Type

A majority (86%) of respondents came from private universities, reflecting the strong student achievement movement in private institutions also (Figure 3).

Figure 3. Respondents by Type of University

Source: Researcher (2024)

3.2.2.2. Based on Faculty

An analysis of respondents by faculty field revealed that Faculty of Communication contributed the largest proportion (23.81%), followed by Engineering and Medicine. This distribution reflects the diverse academic backgrounds of high-achieving students involved in the study. See Table 6

Table 6. Participants by Faculty field

Faculty	Amount	Percentage
Fakultas Ilmu Komunikasi - Program Studi: Jurnalistik, Hubungan Masyarakat, Periklanan, Broadcasting, Komunikasi Digital, dan lainnya.	15	23,81%
Fakultas Teknik (FT) - Program Studi: Teknik Sipil, Teknik Mesin, Teknik Elektro, Teknik Kimia, Teknik Industri, Arsitektur, dan lainnya.	9	14,29%
Fakultas Kedokteran (FK) - Program Studi: Pendidikan Dokter, Keperawatan, Farmasi, Kedokteran Gigi, Kedokteran Hewan, dan lainnya.	8	12,70%
Fakultas Ilmu Komputer (FASILKOM) - Program Studi: Sistem Informasi, Teknik Informatika, Ilmu Komputer, Teknologi Informasi, dan lainnya.	6	9,52%
Fakultas Ekonomi dan Bisnis (FEB) - Program Studi: Akuntansi, Manajemen, Ekonomi Pembangunan, Perbankan dan Keuangan, dan lainnya.	6	9,52%
Fakultas Ilmu Sosial dan Ilmu Politik (FISIP) - Program Studi: Ilmu Politik, Sosiologi, Antropologi, Hubungan Internasional, Administrasi Publik, dan lainnya.	4	6,35%
Fakultas Kesehatan Masyarakat (FKM) - Program Studi: Kesehatan Lingkungan, Epidemiologi, Gizi Kesehatan Masyarakat, Administrasi Rumah Sakit, dan lainnya.	4	6,35%
Fakultas Hukum (FH) - Program Studi: Hukum Perdata, Hukum Pidana, Hukum Internasional, Hukum Tata Negara, dan lainnya.	3	4,76%
Fakultas Matematika dan Ilmu Pengetahuan Alam (FMIPA) - Program Studi: Matematika, Fisika, Kimia, Biologi, Statistika, dan lainnya.	3	4,76%
Fakultas Sastra dan Bahasa - Program Studi: Sastra Inggris, Sastra Indonesia, Sastra Jepang, Linguistik, Bahasa Asing, dan lainnya.	2	3,17%
Fakultas Seni dan Desain - Program Studi: Desain Komunikasi Visual, Desain Interior, Seni Rupa, Desain Produk, dan lainnya.	2	3,17%
Fakultas Psikologi - Program Studi: Psikologi Klinis, Psikologi Industri dan Organisasi, Psikologi Pendidikan, dan lainnya.	1	1,59%
Total	63	100,00%

Source: Processed by the researcher (2024)

3.2.2.3. Based on Year of University Entry

Students enrolled in 2021 accounted for the largest proportion of participants in this study. This trend may be attributed to increased involvement typically seen in the second or third year of university studies. See Figure 4

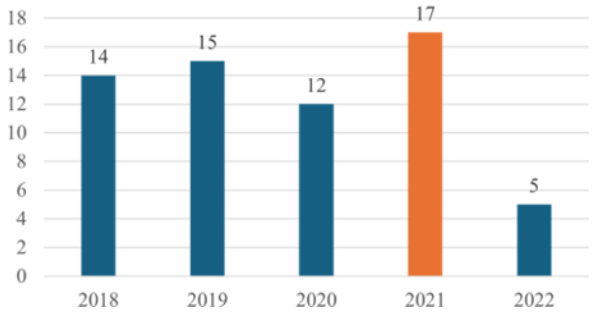

Figure 4. University Entry

Source: Researcher (2024)

3.2.2.4. Based on GPA and Gender

The majority of respondents were female. Most of them had a GPA between 3.76 and 3.90 (26 students), compared to 9 male students in the same range. Female respondents also outnumbered males in the highest GPA bracket (3.91–4.00). See Figure 5

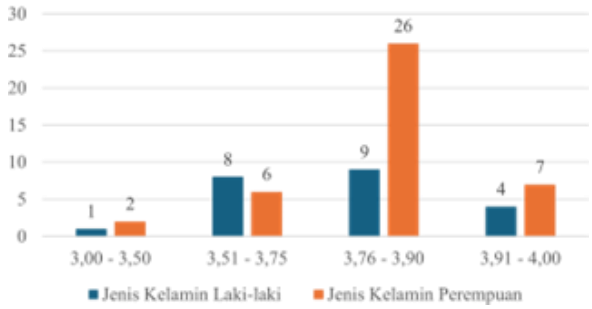

Figure 5. GPA and Gender.

Source: Researcher (2024)

3.2.2.5. Based on Organizational Experience and Level

The majority of respondents (60 individuals) had organizational experience, while only 3 reported none. Among those with such experience, a substantial proportion held key leadership positions, including Coordinators (25), Chairpersons (15), and Secretaries (11). This suggests not only active involvement in student organizations but also a strong presence in leadership roles. See Figure 6

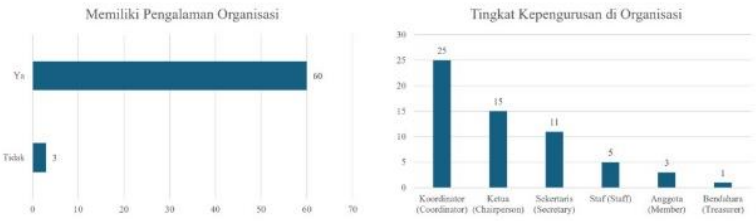

Figure 6. Organizational Experience and Level.

Source: Researcher (2024)

3.2.3. Outer Model Analysis

3.2.3.1. Convergent Validity

Convergent validity in this study was evaluated solely based on outer loading values of the indicators to their respective latent constructs, consistent with the analytical approach outlined in the thesis. Indicators with loading factors below 0.70 were removed sequentially, and model recalculations were conducted for each construct in Table 7:

Table 7. Initial Convergent Validity

Variable	Indicator	Loadings Factor	Description
Competition Preparedness	CP1	0,658	Not Valid
Competition Preparedness	CP2	0,841	Valid
Competition Preparedness	CP3	0,612	Not Valid
Competition Preparedness	CP4	0,826	Valid
Competition Preparedness	CP5	0,808	Valid
Competition Preparedness	CP6	0,657	Not Valid
Competition Preparedness	CP7	0,642	Not Valid
Competition Preparedness	CP8	0,821	Valid
Competition Preparedness	CP9	0,737	Valid
Competition Preparedness	CP10	0,705	Valid
Competition Preparedness	CP11	0,874	Valid
Perceived Value	PV1	0,778	Valid
Perceived Value	PV2	0,866	Valid
Perceived Value	PV3	0,798	Valid
Perceived Value	PV4	0,809	Valid
Perceived Value	PV5	0,819	Valid
Perceived Value	PV6	0,817	Valid
Perceived Value	PV7	0,778	Valid
Student Engagement	SE1	0,518	Not Valid
Student Engagement	SE2	0,629	Not Valid
Student Engagement	SE3	0,276	Not Valid
Student Engagement	SE4	0,791	Valid
Student Engagement	SE5	0,830	Valid
Student Engagement	SE6	0,807	Valid
Student Engagement	SE7	0,760	Valid
Student Engagement	SE8	0,741	Valid
Student Engagement	SE9	0,802	Valid
Student Engagement	SE10	0,663	Not Valid
Student Engagement	SE11	0,761	Valid
Student Engagement	SE12	0,808	Valid
Student Engagement	SE13	0,656	Not Valid
Student Engagement	SE14	0,769	Valid
Student Engagement	SE15	0,591	Not Valid
Student Engagement	SE16	0,670	Not Valid
Self-Efficacy	SEF1	0,758	Valid
Self-Efficacy	SEF2	0,676	Not Valid
Self-Efficacy	SEF3	0,605	Not Valid
Self-Efficacy	SEF4	0,739	Valid
Self-Efficacy	SEF5	0,651	Not Valid

Source: Processed by the researcher (2024)

3.2.3.1.1. Recalculated Competition Preparedness

Four indicators—CP3, CP7, CP6, and CP1—were sequentially eliminated in that order based on their lowest loading factors. The final structure retained seven valid indicators with loading values above 0.70: see Table 8

Table 8. Recalculated Convergent Validity Values – Competition Preparedness

Variable	Indicator	Loadings Factor	Description
Competition Preparedness	CP2	0,843	Valid
Competition Preparedness	CP4	0,826	Valid
Competition Preparedness	CP5	0,824	Valid
Competition Preparedness	CP8	0,845	Valid
Competition Preparedness	CP9	0,755	Valid
Competition Preparedness	CP10	0,737	Valid
Competition Preparedness	CP11	0,878	Valid
Perceived Value	PV1	0,780	Valid
Perceived Value	PV2	0,866	Valid
Perceived Value	PV3	0,798	Valid
Perceived Value	PV4	0,809	Valid
Perceived Value	PV5	0,819	Valid
Perceived Value	PV6	0,816	Valid
Perceived Value	PV7	0,778	Valid
Student Engagement	SE1	0,514	Not Valid
Student Engagement	SE2	0,626	Not Valid
Student Engagement	SE3	0,247	Not Valid
Student Engagement	SE4	0,793	Valid
Student Engagement	SE5	0,831	Valid
Student Engagement	SE6	0,805	Valid
Student Engagement	SE7	0,759	Valid
Student Engagement	SE8	0,741	Valid
Student Engagement	SE9	0,802	Valid
Student Engagement	SE10	0,661	Not Valid
Student Engagement	SE11	0,762	Valid
Student Engagement	SE12	0,809	Valid
Student Engagement	SE13	0,659	Not Valid
Student Engagement	SE14	0,771	Valid
Student Engagement	SE15	0,593	Not Valid
Student Engagement	SE16	0,672	Not Valid
Self-Efficacy	SEF1	0,758	Valid
Self-Efficacy	SEF2	0,672	Not Valid
Self-Efficacy	SEF3	0,604	Not Valid
Self-Efficacy	SEF4	0,742	Valid
Self-Efficacy	SEF5	0,656	Not Valid

Source: Processed by the researcher (2024)

3.2.3.1.2. Recalculated Student Engagement

Seven indicators—SE3, SE1, SE15, SE2, SE13, SE10, and SE16—were removed in sequence, with AVE recalculated at each step. The process yielded 13 valid items with sufficient outer loadings (Table 9)

Table 9. Recalculated Convergent Validity Values – Student Engagement

Variable	Indicator	Loadings Factor	Description
Competition Preparedness	CP2	0,844	Valid
Competition Preparedness	CP4	0,827	Valid
Competition Preparedness	CP5	0,824	Valid
Competition Preparedness	CP8	0,845	Valid
Competition Preparedness	CP9	0,754	Valid

Competition Preparedness	CP10	0,734	Valid
Competition Preparedness	CP11	0,878	Valid
Perceived Value	PV1	0,781	Valid
Perceived Value	PV2	0,866	Valid
Perceived Value	PV3	0,797	Valid
Perceived Value	PV4	0,809	Valid
Perceived Value	PV5	0,819	Valid
Student Engagement	SE4	0,794	Valid
Student Engagement	SE5	0,842	Valid
Student Engagement	SE6	0,816	Valid
Student Engagement	SE7	0,765	Valid
Student Engagement	SE8	0,749	Valid
Student Engagement	SE9	0,831	Valid
Student Engagement	SE11	0,800	Valid
Student Engagement	SE12	0,816	Valid
Student Engagement	SE14	0,756	Valid
Student Engagement	SE16	0,713	Valid
Self-Efficacy	SEF1	0,756	Valid
Self-Efficacy	SEF2	0,674	Not Valid
Self-Efficacy	SEF3	0,602	Not Valid
Self-Efficacy	SEF4	0,739	Valid
Self-Efficacy	SEF5	0,661	Not Valid

Source: Processed by the researcher (2024)

3.2.3.1.2. Recalculated Self-Efficacy

Three indicators—SEF3, SEF5, and SEF2—were eliminated one by one, with SEF3 removed first due to the lowest loading. Final retained indicators totaled five. See Table 10

Table 10. Final Convergent Validity Values

Variable	Indicator	Loadings Factor	Description
Competition Preparedness	CP2	0,844	Valid
Competition Preparedness	CP4	0,827	Valid
Competition Preparedness	CP5	0,824	Valid
Competition Preparedness	CP8	0,845	Valid
Competition Preparedness	CP9	0,754	Valid
Competition Preparedness	CP10	0,734	Valid
Competition Preparedness	CP11	0,878	Valid
Perceived Value	PV1	0,780	Valid
Perceived Value	PV2	0,865	Valid
Perceived Value	PV3	0,800	Valid
Perceived Value	PV4	0,811	Valid
Perceived Value	PV5	0,817	Valid
Perceived Value	PV6	0,817	Valid
Perceived Value	PV7	0,776	Valid
Student Engagement	SE4	0,794	Valid
Student Engagement	SE5	0,842	Valid
Student Engagement	SE6	0,816	Valid
Student Engagement	SE7	0,765	Valid
Student Engagement	SE8	0,749	Valid
Student Engagement	SE9	0,831	Valid
Student Engagement	SE11	0,800	Valid
Student Engagement	SE12	0,817	Valid
Student Engagement	SE14	0,756	Valid
Student Engagement	SE16	0,713	Valid
Self-Efficacy	SEF1	0,861	Valid

Self-Efficacy	SEF4	0,829	Valid
Self-Efficacy	SEF5	0,715	Valid

Source: Processed by the researcher (2024)

3.2.3.2. Discriminant Validity

Discriminant validity in this study was evaluated using two approaches: Cross Loading and Fornell & Larcker Criterion.

3.2.3.2.1. Cross Loading

Each indicator was confirmed to load highest on its respective latent variable compared to other constructs. No cross-loading violations were identified (Table 11).

Table 11. Cross Loading

Indicator	Competition Preparedness	Perceived Value	Student Engagement	Self-Efficacy
CP2	0.844	0.793	0.760	0.292
CP4	0.827	0.687	0.718	0.226
CP5	0.824	0.739	0.705	0.358
CP8	0.845	0.683	0.764	0.413
CP9	0.754	0.693	0.735	0.444
CP10	0.734	0.641	0.665	0.303
CP11	0.878	0.737	0.828	0.356
PV1	0.713	0.780	0.706	0.418
PV2	0.735	0.865	0.763	0.335
PV3	0.768	0.800	0.733	0.347
PV4	0.710	0.811	0.665	0.205
PV5	0.698	0.817	0.706	0.340
PV6	0.682	0.817	0.659	0.414
PV7	0.619	0.776	0.632	0.256
SE4	0.733	0.653	0.795	0.493
PV1	0.713	0.780	0.706	0.418
PV2	0.735	0.865	0.763	0.335
PV3	0.768	0.800	0.733	0.347
PV4	0.710	0.811	0.665	0.205
PV5	0.698	0.817	0.706	0.340
PV6	0.682	0.817	0.659	0.414
PV7	0.619	0.776	0.632	0.256
SE4	0.733	0.653	0.795	0.493
SE5	0.757	0.664	0.842	0.406
SE6	0.744	0.736	0.816	0.277
SE7	0.723	0.827	0.764	0.235
SE8	0.692	0.646	0.749	0.435
SE9	0.785	0.723	0.831	0.296
SE11	0.705	0.630	0.800	0.334
SE12	0.746	0.668	0.817	0.393
SE14	0.672	0.607	0.757	0.612
SE16	0.580	0.614	0.713	0.462
SEF1	0.337	0.378	0.472	0.861
SEF4	0.379	0.360	0.377	0.829
SEF5	0.290	0.236	0.331	0.715

Source: Processed by the researcher (2024)

3.2.3.2.2. Fornell & Larcker

The square root of the AVE for each construct was greater than the correlations with other constructs, indicating satisfactory discriminant validity (Table 12)

Table 12. Fornell & Larcker Criterion

	Competition Preparedness	Perceived Value	Self-Efficacy	Student Engagement
Competition Preparedness	0.817			
Perceived Value	0.871	0.810		
Self-Efficacy	0.418	0.412	0.804	
Student Engagement	0.907	0.861	0.494	0.789

Source: Processed by the researcher (2024)

The square root of AVE for Competition Preparedness is 0.817, which exceeds its correlations with Perceived Value (0.871) and Student Engagement (0.907). Despite these high correlations, the value indicates adequate discriminant validity, suggesting that the construct distinctly measures its own indicators. This may reflect the strong link between students' preparedness and their engagement or perceived value of the competition experience. Perceived Value has a square root of AVE of 0.810, which is higher than its correlation with Self-Efficacy (0.412), but slightly lower than its correlations with Competition Preparedness (0.871) and Student Engagement (0.861). This still supports sufficient discriminant validity, though some conceptual overlap may exist, possibly because respondents view preparedness and engagement as part of the value they perceive. Student Engagement shows a square root of AVE of 0.789, which is lower than its correlations with Competition Preparedness (0.907) and Perceived Value (0.861). However, the value remains above the 0.700 threshold, indicating acceptable discriminant validity. This could be due to students perceiving their engagement as inherently tied to both their preparation and the value of the experience.

3.2.3.3. Raliability

Reliability testing was conducted by evaluating composite reliability (CR) and average variance extracted (AVE). A construct is considered to have good reliability if the CR is above 0.700 and the AVE exceeds 0.500. This evaluation ensures that the instrument produces consistent and dependable measurements of latent variables (Table 13).

Table 13. Construct reliability and validity

Variable	Composite reliability (rho_c)	Average variance extracted (AVE)	Description
Competition Preparedness	0.933	0.667	Reliable
Perceived Value	0.930	0.656	Reliable
Self-Efficacy	0.845	0.647	Reliable
Student Engagement	0.943	0.623	Reliable

Source: Processed by the researcher (2024)

3.2.4. Inner Model Analysis

3.2.4.1. R Square

The structural model was evaluated using R-square and adjusted R-square values for each dependent latent variable, as shown in Table 14. These values were obtained through the PLS method.

Table 14. R Square

Variable	R-square	R-square adjusted
Competition Preparedness	0.873	0.864
Perceived Value	0.169	0.156
Student Engagement	0.764	0.756

Source: Processed by the researcher (2024)

Competition Preparedness: $R^2 = 0.873$ (strong), Student Engagement: $R^2 = 0.764$ (strong), Perceived Value: $R^2 = 0.169$ (weak)

3.2.4.2. Hypothesis Testing

The bootstrapping method was applied to test the strength and significance of relationships among the variables. This method enables a more comprehensive analysis of both direct and indirect effects.

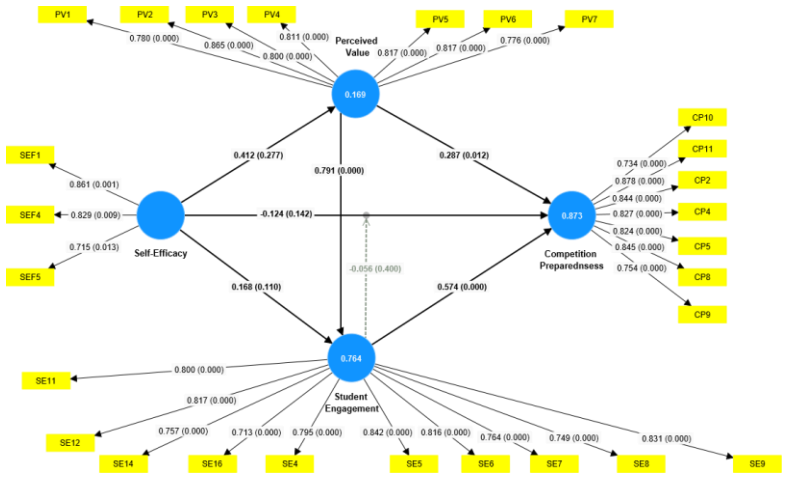

Figure 7. Complete Path Diagram of the Research Model (Coefficients and p-values).

Source: Researcher (2024)

Figure 7 presents the complete path diagram of the research model, showing the path coefficients and p-values for each relationship among the constructs. This visualization illustrates how Self-Efficacy, Perceived Value, Student Engagement, and Competition Preparedness are interconnected in the tested model. A hypothesis is accepted if the T-statistic > 1.96 or the p-value < 0.05. The Table 15 summarizes the hypothesis testing results:

Table 15. Hypothesis Testing

Hypothesis	Variable	Original sample (O)	T statistics	P values	Description
H1	Self-Efficacy -> Perceived Value	0,412	1,087	0,277	Not Supported
H2	Self-Efficacy -> Student Engagement	0,168	1,601	0,110	Not Supported
H3	Self-Efficacy -> Competition Preparedness	-0,124	1,468	0,142	Not Supported
H4	Perceived Value -> Competition Preparedness	0,287	2,501	0,012	Supported
H5	Student Engagement -> Competition Preparedness	0,574	5,072	0,000	Supported
H6	Perceived Value -> Student Engagement	0,791	10,425	0,000	Supported

H7	Self-Efficacy -> Student Engagement -> Competition Preparedness	0,097	1,532	0,125	Not Supported

Source: Processed by the researcher (2024)

3.2.5. Confirmation communication

Confirmation communication was conducted after obtaining the statistical test results by contacting respondents with a track record of winning at the LLDIKTI regional level. These respondents were asked to allocate time to share their views on the findings of this study. As a result, three former Pilmapres regional winners agreed to provide their insights on the research outcomes.

3.2.6. Findings Discussion

3.2.6.1. H1 – Self-Efficacy → Perceived Value (Not Supported)

This study found no significant relationship between self-efficacy and perceived value (T = 1.087, p = 0.277). The finding reveals that confidence alone is insufficient to trigger students' recognition of the value of Pilmapres. The novelty lies in showing that in structured and externally judged competitions, students may undervalue opportunities regardless of their self-belief unless institutions intentionally frame the competition as meaningful. This underscores the importance of contextual support and strategic communication in shaping motivational appraisal. This interpretation is also supported by confirmation communication insights, where students with high confidence expressed uncertainty about the long-term relevance of the competition without explicit institutional endorsement.

3.2.6.2. H2 – Self-Efficacy → Student Engagement (Not Supported)

The absence of a significant relationship (T = 1.601, p = 0.110) indicates that personal belief in one's abilities does not automatically translate to active behavioral involvement. This finding is important because it challenges assumptions that confidence naturally leads to action. It reveals a new insight that structured mentorship, social reinforcement, and institutional culture are more critical in cultivating engagement than previously assumed, especially in formal competitive settings. Qualitative validation from confirmation interviews further reinforced that engagement often stemmed from community or peer dynamics rather than internal belief alone.

3.2.6.3. H3 – Self-Efficacy → Competition Preparedness (Not Supported)

Self-efficacy also has no significant effect on competition preparedness (T = 1.468, p = 0.142). The interpretation suggests that confidence without structured preparation or external scaffolding may not evolve into real action. This finding introduces a practical implication: readiness for competitions requires more than belief demands goal setting, coaching, and actionable strategies. The result prompts a shift in focus from internal motivation to externally supported performance systems. Supporting this, several students in the confirmation stage admitted that even with prior achievements, they still felt unprepared without targeted guidance.

3.2.6.4. H4 – Perceived Value → Competition Preparedness (Supported)

Students who viewed Pilmapres as valuable demonstrated higher levels of preparedness (T = 2.501, p = 0.012). This highlights that motivational perception of benefit is a key factor in student readiness. The finding confirms and extends Expectancy-Value Theory in the context of academic competition. It also suggests that framing competitions as beneficial (through rewards, recognition, or skill development) can powerfully shape student effort and goal pursuit. Quotes from participants affirm that the prestige and benefits associated with Pilmapres motivated them to invest in preparation even outside formal training.

3.2.6.5. H5 – Student Engagement → Competition Preparedness (Supported)

Engagement was the strongest predictor of preparedness (T = 5.072, p = 0.000), with students who were more behaviorally and emotionally involved also better prepared. This finding reinforces prior research but also contributes a contextual insight: leadership experience and proactive involvement in campus life may simulate the demands of high-stakes competitions, thus creating a natural training ground. The implication is clear institutions should build rich engagement environments as pipelines to competitive excellence. This was echoed in confirmation communication, where highly engaged students reflected that their organizational roles taught them time management, discipline, and goal orientation relevant to Pilmapres.

3.2.6.6. H6 – Perceived Value → Student Engagement (Supported)

Students who believed in the value of Pilmapres showed significantly higher engagement (T = 10.425, p = 0.000). This supports the idea that when students internalize the meaning and benefit of an activity, they willingly commit their energy to it. The insight here is that value-driven messaging can directly enhance involvement, and therefore, universities should prioritize how competitions are communicated and positioned in student development ecosystems. In interviews, students repeatedly linked their motivation to institutional messaging and senior testimonials that emphasized the competition's impact.

3.2.6.7. H7 – Mediation of Student Engagement Between Self-Efficacy and Competition Preparedness (Not Supported)

The indirect effect of self-efficacy on competition preparedness through student engagement is not significant (T = 1.532, p = 0.125). This implies the two constructions operate parallel rather than sequential pathways. The novelty of this finding lies in clarifying that even engaged students with high confidence still require separate interventions to be the competition ready. For program designers, this means that engagement activities and confidence-building should not be conflated but instead addressed through distinct but complementary strategies. Student narratives affirmed that even those with active roles or high self-belief struggled with Pilmapres expectations when lacking technical or structured support.

4. CONCLUSION

This study addressed a central gap in the field of student development and competition studies: the lack of integrated, empirical models explaining what psychological and motivational factors best shape students' readiness for academic competition. While previous literature often assumes that self-efficacy is a universal driver of performance, few studies have rigorously tested this assumption in the context of structured national competitions like Pilmapres. This study fills that void by evaluating and comparing the roles of self-efficacy, perceived value, and student engagement within a competition-specific framework. Contrary to conventional beliefs, self-efficacy did not emerge as a direct determinant of student engagement, perceived value, or preparedness. Instead, this research revealed that perceived value and student engagement were the strongest and most consistent predictors of competition readiness. These findings are significant because they challenge long-standing assumptions in motivational theory that place self-belief at the center of student outcomes. Internal confidence by itself is not enough in high-stakes, externally assessed situations.

This study's conceptual and methodological contributions are what make it unique. Theoretically, it reinterprets preparation as a reaction to how institutions convey value and create engagement opportunities rather than as a result of personal disposition. It uses a two-pronged methodology that combines confirmation communication with Partial Least Squares Structural Equation Modeling (PLS-SEM) to capture both structural relationships and the lived experiences of student participants. By integrating Expectancy-Value Theory and Social Cognitive Theory into the academic competition ecosystem, the study theoretically expands on these ideas. It illustrates that perceived value is an

institutional construct that is influenced by mentorship, reward framing, and strategic communication rather than just being a personal opinion.

In summary, this study makes three primary contributions: 1) It confirms that intentional engagement design and institutional value framing have a greater impact on student readiness than self-efficacy alone; (2) It presents a methodologically innovative model that combines quantitative structure and qualitative depth; and (3) It provides useful information for colleges looking to restructure their student achievement ecosystems. Future studies should look into the ways that value perception is created and maintained in different institutional contexts as well as the long-term effects of structured engagement interventions on preparedness. In order to further improve competition-readiness models and test the consistency of these findings across various academic contexts, longitudinal and multi-regional studies would be beneficial. In order to gain a deeper understanding of how students internalize, commit to, and act upon competitive opportunities, future research may also examine alternative or complementary variables like institutional trust, learning climate, student advisors, or motivational regulation as potential predictors or mediators.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

Not Applicable

Disclosure Statement

There is none of any potential conflict of interest reported by the author(s)

Data Availability Statement

The data used in this research are publicly available to be accessed. The data used in this research could be accessed through

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Notes on Contributors

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