CHAPTER IV
FINDINGS AND DISCUSSION

This chapter explains the research methodology used in the study which consists of research design, data collection, and data analysis. By applying Hyland's model, the research questions are answered. The first finding is the rhetorical moves and linguistic features of Computer Science journal research abstracts from SINTA (1-6). Then, there is also a further discussion of the findings.

4.1 Findings

This section presents the findings of the rhetorical moves analysis and linguistic features. The findings of the rhetorical moves include the occurrences of moves and steps, the saliences of moves and steps, and the linguistic features pattern which includes tense and voice.

4.1.1 The realization of the rhetorical moves and steps

The research questions are proposed to analyze rhetorical moves of Computer Science Journal from SINTA. 120 abstracts were collected from six different levels of Sinta, each Sinta represented one journal. The analysis began by identifying each sentence from the research article abstracts and categorizing them in each move and steps. Hyland's (2000) model was used to divide the categories of rhetorical moves and steps.

4.1.1.1 The findings of moves

This study found that all of Computer Science journals' research article abstracts in each Sinta applied the five moves, Move 1 - *Introduction/Background*, Move 2 - *Purpose*, Move 3 - *Method*, Move 4 - *Findings*, and Move 5 - *Conclusion*. There were 1031 moves in total, for each Sinta level, Sinta 1 had 217 moves, Sinta 2 had 182 moves, Sinta 3 had 156 moves, Sinta 4 had 162 moves, Sinta 5 had 151 moves, and Sinta 6 had 163 moves. Based on the analysis, Move 1 and Move 3 tend to dominate their occurrences. Table 4.1 shows the realizations of move and step manifestation in all Sinta levels.

SINTA 1	SINTA 2	SINTA 3	SINTA 4	SINTA 5	SINTA 6
217 moves and 171 steps	182 moves and 146 steps	156 moves and 125 steps	162 moves and 128 steps	151 moves and 121 steps	163 moves and 132 steps

Table 4.1 *Move and steps manifestation across all Sinta levels*

	M1	%	M2	%	M3	%	M4	%	M5	%	
SINTA 1	85	39.17%	23	10.60%	64	29.49%	31	14.29%	14	6.45%	% = total number of each move in each sinta / total moves in each sinta
SINTA 2	56	30.77%	21	11.54%	62	34.07%	29	15.93%	14	7.69%	
SINTA 3	62	39.74%	18	11.54%	51	32.69%	19	12.18%	6	3.85%	
SINTA 4	62	38.27%	18	11.11%	57	35.19%	21	12.96%	4	2.47%	
SINTA 5	49	32.45%	20	13.25%	56	37.09%	19	12.58%	7	4.64%	
SINTA 6	80	49.08%	20	12.27%	48	29.45%	13	7.98%	2	1.23%	
TOTAL MOVES (ALL SINTA LEVELS)	394	38.22%	120	11.64%	338	32.78%	132	12.80%	47	4.56%	1031

Table 4.2 *The distribution of move occurrences in each Sinta*

Table 4.2 showed the distribution of move occurrences in each Sinta. In Sinta 1, Sinta 3, Sinta 4, and Sinta 6, Move 1 showed frequently, while in Sinta 2 and Sinta 5 Move 3 was the most frequent. Move 5 was the least occurring move in all Sinta levels. Move 2 was more dominant than Move 4 in Sinta 5 and 6. Move 4 had more occurrences than Move 2 in Sinta 1 to 4. Figure 4.1 illustrates below the move occurrences of all Sinta levels.

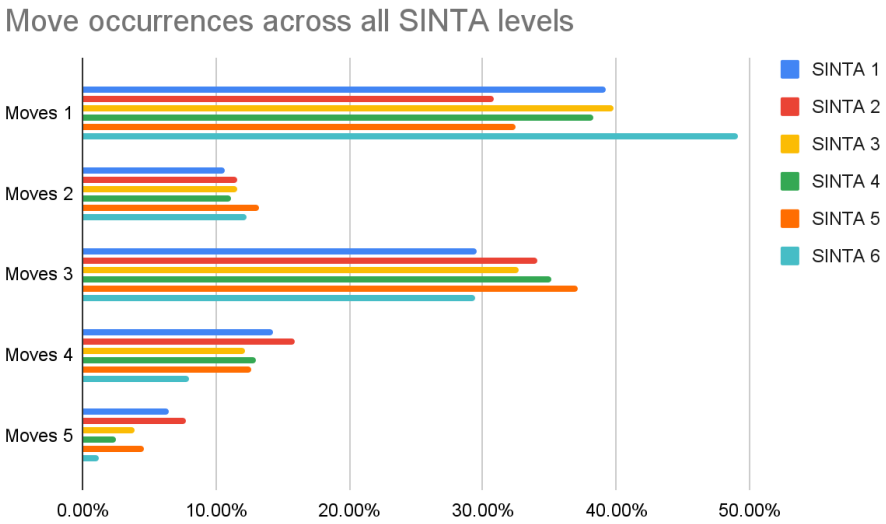

Figure 4.1 *Move occurrences across all Sinta levels*

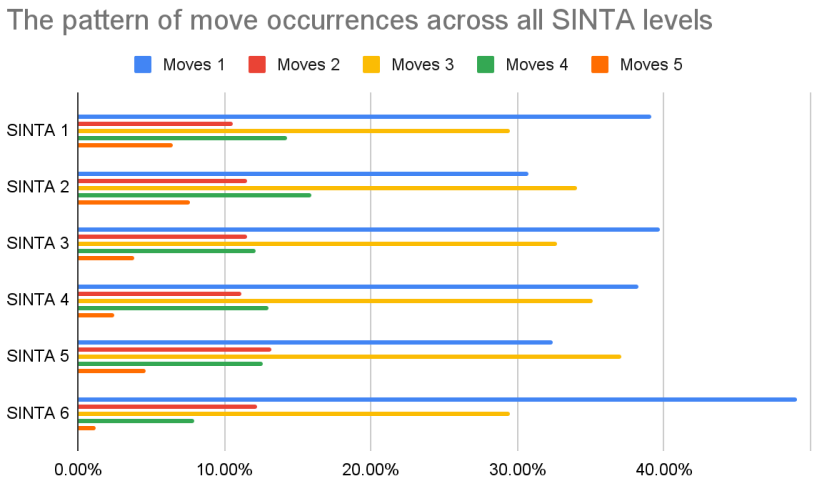

Figure 4.2 *The pattern of move occurrences across all Sinta levels*

Based on the chart, despite the differences of their occurrences, the pattern for all moves in each Sinta was similar. Move 1 - *Introduction* became the most frequent move across all Sinta levels' abstracts. There were 394 moves or 38.22%. The following examples appeared as Move 1 in the abstracts.

[Example 4.1]

Dynamic Programming (DP) **is** still the core algorithm in many biological analysis tools, especially similarity analysis. [Sinta 1 - 11, Move 1, Sentence 1]

[Example 4.2]

The use of Internet of Things (IoT) **plays** an important role in supporting wireless communication for middleware in collecting data sensors. [Sinta 3 - 13, Move 1, Sentence 1]

In the data, signal words such as “is” and “plays”, which described the general verb used to begin a descriptive statement, indicated Move 1 to show background statement and research significance.

Move 3 - *Method* with 338 occurrences or 32.78% became the second most frequent move across all Sinta levels’ abstracts. The following examples appeared as Move 3 representations.

[Example 4.3]

Several Machine Learning algorithms were applied to find the best model, i.e. k-Nearest Neighbors, Naïve Bayes Classifier, Decision Tree (C4.5), and Neural Networks (Multilayer Perceptron) where each of them was **validated using 10-fold Cross Validation techniques**. [Sinta 2 - 12, Move 3, Sentence 5]

[Example 4.4]

The method used is the **methodology of Object Oriented Business Application Development** and make **CodeIgniter as the framework** of the system. [Sinta 5 - 7, Move 3, Sentence 3]

Move 3 mostly described how the research method was conducted, as seen in the data which had signal words such as “Several Machine Learning algorithms”, “validated using 10-fold Cross Validation techniques”, “methodology”, and “framework”.

Move 5 - *Conclusion* was the least occurred move from all Sinta levels, with only 47 moves out of 1031 moves or 4.56%. Sentences in Move 5 appeared in the following examples.

[Example 4.5]

We **conclude** that the proposed framework is applicable, and in the end, it can support method engineers in applying SMEs in their software projects with less effort. [Sinta 1 - 18, Move 5, Sentence 18]

[Example 4.6]
The findings of this experiment can be used as a proposal for researching the field of web usage mining, collaborating with other approaches to achieve higher accuracy values. [Sinta 2 - 18, Move 5, Sentence 8]

The signal words used for Move 5 - *Conclusion* were such as "conclude" and "The findings of this experiment can be used …" showed the concluding and presenting recommendations for future research.

In this study, it was also found that there were mixed moves. The most occurring mixed moves were the embedment of Move 2 and Move 3, there are 13 sentences from all Sinta levels. The second most occurring mixed moves were the embedment of Move 4 and Move 5, there were 10 sentences from all Sinta levels.

The example of a combination of Move-2 and Move 3:
[Example 4.7]
In this study a system design **was made to classify** hate speech in Balinese writing **using the Naïve Bayes method**. [Sinta 6 - 17, Move 2-3, Sentence 5]

The example of a combination of Move-4 and Move-5:
[Example 4.8]
Our study shows that the latter **statistically outperforms the former by 13% in terms of precision**; slow-paced students **are likely to be the perpetrators**, but they **fail to get** the submissions of smart students. [Sinta 3 - 15, Move 4-5, Sentence 4]

The data were categorized as the embedded move because in the sentence, it consisted of both Move 2-3 and Move 4-5 combinations for the contexts. In data 4.7, Move 2 in the sentence could be seen in signal words "was made to classify"

and Move 3 was shown in “using the Naive Bayes method”. Data 4.8 showed the signal words “statistically outperforms the former by 13% in terms of precision” considered as Move 4 - *Findings*, and followed by “slow-paced students are likely to be the perpetrators” showed Move 5 as the conclusion of findings. The combination moves happened because the decision of considering move was based on contexts, not just sentence structure.

In percentage, the difference between Move 1 and Move 3 occurrences was only 3% - 9.68% except for Sinta 6 which had 19.63% difference. Another finding appeared that Sinta 6 had the most divergence percentage between the occurrences of Move 1 and Move 5, it was 47.85%.

This study also found the most occurring pattern was M1 - M3 - M4 - M2 - M5, it was applied for Sinta 1, Sinta 3, dan Sinta 4. For Sinta 2, the pattern showed M3 - M1 - M4 - M2 - M5 and Sinta 5 showed M1 - M3 - M2 - M4 - M5. Lastly, Sinta 6 had M1 - M3 - M2 - M4 - M5 as its pattern. There was no difference between Sinta levels for the dominance of moves, Move 1 - *Introduction* distributed more than 30% in each Sinta, with the highest percentage in Sinta 5, 49.08% occurrence.

4.1.1.2 The Findings of Steps

The steps in this study are divided into 11 steps and linked to 3 moves. Move 1 - *Introduction or background* consists of Step 1 - *Arguing for topic significance*, Step 2 - *Making topic generalization*, Step 3 - *Defining key term(s)*, and Step 4 - *Identifying research gap*. Move 3 - *Method* consists of Step 5 - *Describing participants/data sources*, Step 6 - *Describing instrument(s)*, and Step 7 - *Describing procedure and context.* Lastly, Move 5 - *Conclusion* consists of Step 8 - *Deducing conclusion*, Step 9 - *Evaluating significance of the research*, Step 10 - *Stating limitation*, and Step 11 - *Presenting recommendation or implication*.

For the step occurrences, there were 823 steps. Sinta 1 had 171 steps, Sinta 2 had 146 steps, Sinta 3 had 125 steps, Sinta 4 had 128 steps, Sinta 5 had 121 steps, and Sinta 6 had 132 steps. The occurrences showed that Step 1, Step 7, and Step 8 tend to dominate in the abstracts pattern. Figure 4.3 showed the occurrences of steps in each Sinta. This subsection will reveal the occurrences of steps in Move 1 to 5

and its analysis among each Sinta level. Table 4.3 displayed the step occurrences in each Sinta level based on the moves.

MOVE	STEP	SINTA 1	SINTA 2	SINTA 3	SINTA 4	SINTA 5	SINTA 6
	S1	49.45%	56.92%	62.12%	63.08%	71.15%	69.14%
M1	S2	10.99%	10.77%	10.61%	16.92%	9.62%	17.28%
	S3	16.48%	15.38%	13.64%	15.38%	11.54%	1.23%
	S4	23.08%	16.92%	13.64%	4.62%	7.69%	12.35%
	S5	18.18%	29.41%	15.09%	13.56%	19.67%	10.00%
M3	S6	21.21%	22.06%	18.87%	42.37%	24.59%	28.00%
	S7	60.61%	48.53%	66.04%	44.07%	55.74%	62.00%
	S8	42.86%	71.43%	66.67%	50.00%	50.00%	0.00%
M5	S9	28.57%	0.00%	16.67%	0.00%	25.00%	100.00%
	S10	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	S11	28.57%	28.57%	16.67%	50.00%	25.00%	0.00%

Table 4.3 *Step occurrences in each move and Sinta level*

Note: yellow means the most frequent, blue means the least frequent

According to Table 4.3, the most frequent step in Move 1 for all Sinta levels was Step 1 - *Arguing for topic significance* with percentage 49.45% - 71.15%. In Move 3, the step which occurred the most was Step 7 - *Describing procedure and context* with percentage 44.07% - 62%. Move 5 considered Step 8 - *Deducing conclusion* as the most frequent one, except in Sinta 6, Step 9 - *Evaluating significance of the research* appeared as the most occurring step.

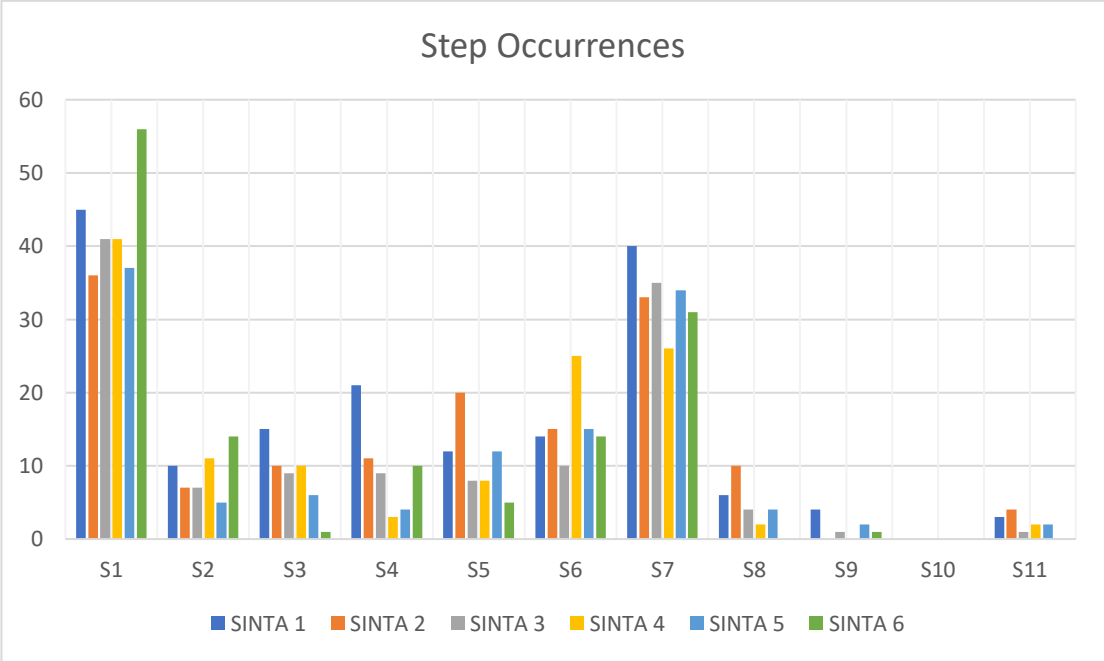

Figure 4.3 *The step occurrences in each Sinta level*

Based on the data, each Sinta level showed similar results for the most frequent occurring step, Step 1 - *Arguing for topic significance* occurred the most. The least step which did not occur at all was Step 10 - *Stating limitation*.

[Example 4.9]
Indonesia e-cash system **faced** with some challenges. [Sinta 1 - 8, Move 1, Step 1, Sentence 1]

The data showed Step 1 - *Arguing for topic significance* because it clearly stated that the topic had some issues which would be resolved in the research.

[Example 4.10]
Nevertheless, extensive bisyllable acoustic models **must be handled** using an advanced method. [Sinta 1 - 13, Move 5, Step 10, Sentence 8]

The data was considered as Step 10 - *Stating limitation* with signal words "must be handled using …" which showed the research could be done with an advanced method as a continuity of the method used in the research.

Step occurrences also had mixed steps cases. For instance, a combination of Step 5 – *Describing data participants or data sources* and Step 7 – *Describing procedure and context* in Move 3.

[Example 4.11]

Variables tested in this study was Threshold Contour error, X error and Size error, then those variables are **tested against** the image with light illumination, yaw face and variation amount of contour lines. [Sinta 1 - 1, Move 3, Step 5 and Step 7, Sentence 7]

From the data, we can see that the signal words "variables tested" showed the data participant and the next joint sentence explained how the variables were tested, it was considered the procedure and context.

4.1.2 The saliences of moves and steps

Based on Kanoksilapatham (2005), if there are less than 66% occurrences in the abstracts, it means it is **optional**. If there are =/>66%-99% occurrences, it is considered **conventional**. 100% occurrences means it is **obligatory**. Table 4.4 and 4.4 displayed the saliences of both moves and steps.

Move	Sinta 1	Sinta 2	Sinta 3	Sinta 4	Sinta 5	Sinta 6
1	100%	100%	100%	100%	95%	95%
2	95%	85%	85%	95%	95%	80%
3	95%	95%	95%	100%	95%	100%
4	90%	95%	75%	80%	75%	45%
5	50%	55%	30%	20%	45%	10%

Table 4.4 *Move salience across Sinta levels*

Move 1 - *Introduction or Background* occurred the most compared to other moves in all Sinta levels. The research article abstracts mostly began with the

background of the research and implied their significance. Move 2 - *Purpose* also usually stated in research article abstracts, however not all purposes were written explicitly. Move 3 - *Method* also stated frequently and well-explained with details. Move 4 - *Findings* usually stated directly and quantitatively, the number was also presented. Move 5 - *Conclusion* rarely appeared in the research article abstracts, and it was applied to all Sinta levels.

Based on Table 4.4, Move 1 in Sinta 1 - 4 was considered obligatory. Meanwhile, in Sinta 5 and 6, it was considered conventional. In all Sinta levels, Move 2 was considered conventional. Move 3 in Sinta 4 and Sinta 6 was also obligatory. In Sinta 1, Sinta 2, Sinta 3, and Sinta 5, Move 3 was considered conventional. Move 4 in Sinta 1 to 5 was considered conventional and in Sinta 6, it was optional. There was a drastic difference of Move 4 salience in Sinta 6 compared to other Sinta levels. Lastly, Move 5 in all Sinta levels was considered optional. From the analysis of move saliences, it showed that Sinta 6 had extreme differences especially in Move 4 and Move 5.

Steps	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
Sinta 1	**85%**	35%	45%	60%	40%	50%	**85%**	**30%**	15%	0%	10%
Sinta 2	**70%**	35%	50%	30%	**80%**	55%	**80%**	**40%**	0%	0%	20%
Sinta 3	**100%**	30%	40%	25%	25%	50%	**80%**	**20%**	5%	0%	10%
Sinta 4	**95%**	40%	35%	15%	30%	65%	**70%**	**10%**	0%	0%	10%
Sinta 5	**85%**	20%	35%	15%	55%	55%	**80%**	**20%**	10%	0%	20%
Sinta 6	**95%**	45%	5%	45%	25%	45%	**95%**	**5%**	**5%**	0%	0%

Table 4.5 *Step saliences across Sinta levels*

According to Table 4.5, Step 1 - *Arguing for topic significance* and Step 7 - *Describing procedure and context* were considered conventional for all Sinta levels except Step 1 in Sinta 3 which was obligatory. In research article abstracts, the

introduction part which gives an argument of the research significance occurred the most followed by the method section which stated procedure and context.

As for Step 2, Step 3, Step 4, Step 6, Step 8, Step 9, Step 10, and Step 11, all Sinta levels considered them as optional. Step 5 - *Describing data participants or sources* was considered as optional except in Sinta 2, it appeared to be conventional. Step 8 – *Deducing conclusion* appeared to be the most frequent step in Move 5 and was considered optional, it was aligned with Gani (2021) findings about hard science research article abstract. From the Sinta levels perspective, there is a difference in step saliences percentage, particularly steps in Move 5.

4.1.3 The manifestation of rhetorical structures

This subsection shows the result of move-based and step-based configurations as well as their patterns.

4.1.3.1 Move-based configuration

Rhetorical structure of Computer Science abstracts has many variations, starting from 2-moves to 5-moves configurations. Each Sinta level had different results of move patterns. Table 4.6 shows the occurrences of move-based configurations.

Configurations	Sinta 1	Sinta 2	Sinta 3	Sinta 4	Sinta 5	Sinta 6
2Ms	0	0	0	0	0	4
3Ms	4	2	6	5	5	8
4Ms	5	10	11	11	9	7
5Ms	11	8	3	4	6	1

Ms = Moves

Table 4.6 *Sum of move-based configurations across Sinta levels*

The findings showed that there was a slight tendency of Sinta levels affecting move-based configurations, Sinta levels related to the dominancy of move-based configurations. For more details, Sinta 1 appeared to have 5-moves configurations as the most dominant pattern. 4-moves configurations were the most

frequent pattern in Sinta 2 to Sinta 5. Meanwhile, Sinta 6 had 3-moves configurations as the most frequent pattern. The least occurred move-based configuration was 2-moves, only Sinta 6 which had the pattern. From Sinta level perspectives, the configurations did not show much difference. However, Sinta 6 had different results compared to other Sinta levels.

SINTA 1			SINTA 2			SINTA 3		
Config. M	Pattern M	No. of RA	Config. M	Pattern M	No. of RA	Config. M	Pattern M	No. of RA
3Ms	1(n) - 3(n) - 4(n) 1(n) - 3(n) -2 2 - 1(n) - 3(n) 1(n) - 2- 4	1 1 1 1	3Ms	1 - 3 - 2 - 3(n) 1(n) - 3 - 4	1 1	3Ms	1(n) - 2 - 3(n) 1(n) - 3(n) - 21(n) - 3(n) - 2 - 3(n) 1(n) - 3(n) - 4(n) 1(n) - 3 - 2 - 3(n)	2 1 1 1
4Ms	1(n) - 3 - 2 - 3(n) - 4 1(n) - 2 - 1(n) - 3(n) - 4 1(n) - 2 - 3 - 4 1(n) - 2 - 3 - 4(n) 1(n) - 2 - 3(n) - 4(n)	1 1 1 1 1	4Ms	1 - 2 - 1(n) - 3(n) - 4 1 - 2 - 3 - 4 1 - 2 - 3(n) - 4(n) 1 - 3 - 2 - 3(n) - 2(n) - 4 1(n) - 1 - 2 - 3(n) - 4 1(n) - 2 - 3(n) - 4 1(n) - 2 - 4 - 5 1(n) - 3(n) - 2 - 4(n) 1(n) - 3(n) - 4(n) - 5 1(n) - 4 - 3 - 5	1 1 1 1 1 1 1 1 1 1	4Ms	1(n) - 2 - 3 - 4 - 3 - 4(n) 1(n) - 2 - 4 - 3 1(n) - 3(n) - 2 -4 1(n) - 2 - 3(n) - 4(n) 1(n) - 3(n) - 4 - 5 1(n) - 2 - 3(n) - 4 1(n) - 3(n) - 2 - 4 1(n) - 2 - 4 - 5 1(n) - 3 - 4(n) - 5 1(n) - 3(n) - 2 - 3 - 4	1 1 1 1 1 1 1 1 1 1
5Ms	1 - 2 - 3(n) - 4(n) - 5(n) 1(n) - 2 - 1 - 3 - 4 - 5 1(n) - 2 - 3(n) - 4 - 5 1(n) - 2 - 3(n) - 4(n) - 3 1(n) - 2 - 3(n) - 4(n) - 5 - 3 - 4(n) - 5 1(n) - 3(n) - 2 - 3(n) - 4 - 5 2 - 1(n) - 3(n) - 4 - 5(n) 2(1) - 1(n) - 3(n) - 4(n) - 5 2 - 1 - 3(n) - 4 - 5(n)	1 1 3 1 1 1 1 1 1	5Ms	1 - 2 - 1 - 3(n) - 4 - 5 1 - 2 - 1(n) - 3(n) - 4 - 5 1(n) - 2 - 1 - 3(n) - 4 - 5 1(n) - 2 - 3 - 4(n) - 5(n) 1(n) - 2 - 3(n) - 4 - 5 1(n) - 2 - 3(n) - 4(n) - 5 2 - 1(n) - 3 - 4 - 5 - 4 - 3	1 1 1 1 1 2 1	5Ms	1 - 2 - 3(n) - 4 - 5 1(n) - 2 - 3(n) - 4 - 5 1(n) - 2 - 3 - 4(n) - 5	1 1 1

Table 4.7.1 *Results of move-based configuration across all Sinta*

SINTA 4			SINTA 5			SINTA 6		
Config. M	Pattern M	No. of RA	Config. M	Pattern M	No. of RA	Config. M	Pattern M	No. of RA
2Ms	-	-	2Ms	-	-	2Ms	1 - 3(n) 1(n) - 3(n) 2 - 3(n)	1 2 1
3Ms	1 - 2 - 3(n) 1(n) - 2 - 3 1(n) - 2 - 3(n) 1(n) - 3 - 4(n)	1 2 1 1	3Ms	1(n) - 2 - 3(n) 1(n) - 2 - 4 1(n) - 3 - 2 1(n) - 3(n) - 2	2 1 1 1	3Ms	1(n) - 2 - 1 - 3(n) 1(n) - 2 - 3 1(n) - 2 - 3 - 4(n) 1(n) - 2 - 3(n) 1(n) - 3(n) - 2 1(n) - 3(n) - 2 - 3 2 - 1(n) - 3(n)	1 2 1 1 1 1 1
4Ms	1 - 3 - 2 - 3 - 4 1(n) - 2 - 3 - 4 1(n) - 2 - 3(n) - 4 1(n) - 2 - 3(n) - 4(n) 1(n) - 2 - 4 - 3 - 4	1 2 5 2 1	4Ms	1 - 2 - 3(n) - 4 1(n) - 2 - 3 - 4 1(n) - 2 - 1 - 3(n) - 5 1(n) - 2 - 3(n) - 4 1(n) - 2 - 3(n) - 4(n) 1(n) - 3 - 2 - 3(n) - 4 1(n) - 3 - 4 - 3(n) - 5 2 - 3(n) - 4 - 5	1 1 1 2 1 1 1 1	4Ms	1(n) - 2 - 3(n) - 4 1(n) - 3 - 2 - 3 - 4 1(n) - 3 - 2(n) - 4 1(n) - 3 - 4 - 2 1(n) - 3(n) - 4 - 3(n) - 5 2 - 1(n) - 4 - 3	2 1 1 1 1 1
5Ms	1 - 2 - 1 - 4 - 3(n) - 5 - 4 1 - 3 - 1 - 3 - 4 - 2 - 5 1(n) - 2 - 3(n) - 4 - 5 1(n) - 2 - 3(n) - 4(n) - 5	1 1 1 1	5Ms	1 - 2 - 3 - 4(n) - 3(n) - 5 1 - 2 - 3(n) - 4 - 5 1(n) - 2 - 3 - 4 - 3 - 4(n) - 5 1(n) - 2 - 3 - 4 - 5 1(n) - 3(n) - 3 - 2 - 4 - 5	1 2 1 1 1	5Ms	1(n) - 2 - 3(n) - 4 - 5	1

Table 4.7.2 *Results of move-based configuration across all Sinta*

Based on the table above, two-moves configuration only appeared in Sinta 6 with pattern 1 - 3(n), 1(n) - 3(n), and 2 - 3(n). It showed that Sinta 6 did not follow the common move sequence of research article abstracts. The most occurring pattern in all Sinta was 1(n) - 2 - 3(n) - 4, in total there were 12 appearances in the configuration.

The following excerpt showed the two-move configuration example.

[Example 4.12]

Learning media **is** an intructional component that includes messages, people, and tools. [...]. Then from that step done **is to make** an aplikasi media NXT desktop-based robotics learning to simplify and reproduce the tutorial on the course of robotics NXT. [Sinta 6 - 1, Move 1-3, Sentence 1 and 7]

Data 4.12 showed that the first sentence followed Move 1 and the sentence starts from “Then, from …” contained Move 3.

This study also found repetitive moves such as 1(n) - 2 - 3 - 4 - 3 - 4(n) - 5 in Sinta 5 and 1(n) - 2 - 3 - 4 - 3 - 4(n) in Sinta 3. The following example showed how the repetitive moves were written.

[Example 4.13]
The **results of the application** of this framework in the case study of e-finance resulted in **two methods used**: user testing and questionnaires. The evaluation of usability in e-government for e-finance case studies using the proposed framework results in usability level of e-finance in terms of **effectiveness**, **efficiency**, and **user satisfaction** are 96%, 92%, and 70 respectively. [Sinta 3 - 1, Move 3-4, Sentence 4 and 5]

The first sentence of data 4.13 manifested the mixed moves of method and results and it continued to explain more about the result and the method through data sources.

4.1.3.2 Step-based configuration

This study analyzed the patterns of step-based configuration in each move. In Move 1, two-steps configuration was found 54 times for all Sinta levels. Move 3 also identified the two-steps configuration as the most dominant with 54 occurrences. Not all Sinta levels used two-steps configuration in Move 3, Sinta 2 and Sinta 6 had one-step configuration as the most dominant one. Move 5 showed a different result, there were 37 one-step configurations which occurred the most for all Sinta levels. Table 4.8 lists down the quantity of step-based configuration in each move and Sinta level.

Move	Configu-rations	Sinta 1	Sinta 2	Sinta 3	Sinta 4	Sinta 5	Sinta 6	Total
M1	1S	4	7	6	6	9	4	36
	2Ss	8	8	8	11	8	11	54
	3Ss	7	5	6	3	2	4	27
	4Ss	1	0	0	0	0	0	1
M3	1S	7	1	9	8	4	9	38
	2Ss	7	10	8	11	10	8	54
	3Ss	5	7	2	1	4	3	22
M5	1S	9	7	7	4	8	2	37
	2Ss	1	2	0	0	2	0	5
	3Ss	0	0	0	0	0	0	0
	4Ss	0	0	0	0	0	0	0

S = Step, Ss = Steps

Table 4.8 *Sum of the pattern of step-based configuration in all Sinta levels*

SINTA 1				SINTA 2				SINTA 3			
Move	Config. S	Pattern S	No. of RA	Move	Config. S	Pattern S	No. of RA	Move	Config. S	Pattern S	No. of RA
M1	1S	1 1(n) 1-2-1(n)-2-1 1-3 1(n)-3 1(n)-4 1(n) - 4(n) 2-1(n) 3-4 1-2-1-2(n)-4 1(n)-3(n)-4-1-2 1(n)-4-1(n)-4(n)-1 2-3-4(n)2-3(n)-4 3(n)-4(n)-1-4 4-1(n)-3 1-4-3-4-2	2 2 1 1 1 2 1 1 1 1 1 1 1 1 1	M1	1S 2Ss 3Ss	1(n) 2 3 1-3 1-3(n) 1-4(n) 1(n)-4 2-1(n) 2-4 3-1(n) 1-2-4 1-3-1-4(n) 1-3(n)-4(n) 1(n)-2-3 3-1-2	3 2 2 1 1 1 1 1 1 2 1 1 1 1 1	M1	1S 2Ss 3Ss	1(n), 3 1-3-1(n) 1-4 1(n)-3-1 2-1 2-1(n) 2(n)-1 3-1(n) 1-2-3-1-2-1-3 1(n)-3(n)-4 2-1-4 2-1-4-1 2-1(n)-4 5-3-1-3	6 2 1 1 1 1 1 1 1 1 1 1 1 1
M3	1S 2Ss	6(n) 7 7(n) 5-2 5-7 5(n) - 7 6-7(n) 7-6 7(n)-6-7(n)	1 3 3 1 1 1 2 1 1	M3	1S 2Ss	5(n) 5-6 5-7 5-7(n) 6-5-6-7(n) 6-7 7-5 7(n)-6	1 1 4 1 1 1 1 1	M3	1S 2Ss	5, 6 7(n) 5-7-5-7 6-7 6-7(n) 7-6 7(n)-5 7(n)-6	3 6 1 2 2 1 1 1

	3Ss	6-7-5 7-5(n)-6-7(n) 7-6-7-5 7-6(n)-5 7(n)-5-6-7-6-7	1 1 1 1 1		3Ss	5-7-6(n) 5-6-7 5-7(n)-6 5(n)-7-6 6(n)-7(n)-5 7(n)-5-6	1 2 1 1 1 1		3Ss	5(n)-6-7 7-6-5	1 1
M5	1S	8 9 9(n) 11	5 1 1 1	M5	1S	8, 11	7	M5	1S	11, 8, 9	7
	2Ss	9-8	1		2Ss	8-11	2				

S = Step, Ss = Steps, n = repetition

Table 4.9.1 *Describing the pattern of step-based configuration in all Sinta levels*

SINTA 4				SINTA 5				SINTA 6			
Move	Config. S	Pattern S	No. of RA	Move	Config. S	Pattern S	No. of RA	Move	Config. S	Pattern S	No. of RA
M1	1S	1 1(n)	2 4	M1	1S	1, 3 1(n), 3(n)	3 6	M1	1S	1 1(n)	1 3
	2Ss	1-2 1-3-1 1(n)-3-1(n) 1(n)-3(n) 1(n)-4 2-1 2-1(n)-2 2-4 2(n)-1 3-1 3(n)-1(n)-3	1 1 1 1 1 1 1 1 1 1 1		2Ss	1-2 1-4(n) 1(n)-3-1 1(n)-4 2-1 2-1(n) 3-1	1 1 1 1 1 1 2		2Ss	1-4 1(n)-2-1-2(n) 1(n)-2-1(n) 1(n)-2(n) 1(n)-4 1(n)-4-1 2-1(n) 4-1(n)	1 1 1 2 3 1 1 1
	3Ss	2-1(n)-4 2-3-1(n)-2-3-1 3-2-1(n)	1 1 1		3Ss	1-2-1-3-1-3 3-4-1	1 1		3Ss	1-2-1-3-2 1(n)-4-2-1-2 2(n)-1(n)-4	1 1 2
M3	1S	6, 7 6(n), 7(n)	6 2	M3	1S	5, 7 6(n) 7 7(n)	2 1 1 1	M3	1S	6, 7 7(n)	6 3
	2Ss	5-7 5-7(n) 6-7 6-7(n) 6(n)-7 6(n)-7(n) 7-6(n)-7 7(n)-5(n)	3 1 2 1 1 1 1 1		2Ss	5-7 5(n)-7 6-5 7-5 7-6 7(n)-5 7(n)-6-7 7(n)-6(n)	1 1 1 1 2 2 1 1		2Ss	5-7 5-7(n) 5(n)-7 6-7 6-7-6 6(n)-7(n)	1 1 1 1 1 3
	3Ss	6-5-7	1		3Ss	5-6-7(n) 6-7(n)-5	1 2		3Ss	6-7-6-5 6(n)-7(n)-5 7-6-7 S	1 1 1
M5	1S	11, 8	4	M5	1S	8, 9, 11	8	M5	1S	8, 9	2
					2Ss	9-11 7-6	1 1				

S = Step, Ss = Steps, n = repetition

Table 4.9.2 *Describing the pattern of step-based configuration in all Sinta levels*

Based on the data acquired from step-based configuration, in Move 1, only Sinta 1 which had 4-steps configuration, the others only had one-step, two-steps, and three-steps configuration. All Sinta levels had one-step configuration in Move 5. Also, only Sinta 3 and Sinta 5 had two-steps configuration for Move 5. Three-steps and four-steps configurations were not used at all in Move 5 across all Sinta levels.

The following example showed four-steps configuration:

[Example 4.14]

Step 1 **- Understanding images by recognizing** its objects **is** still a challenging task.

Step 4 - Tracking of moving human and recognition **have been developed** by researchers but not yet shows enough information needed for recognition.

Step 3 - Initially, a tracking process of an object **starts** with detection and recognition of the object in a static pose and position, and then **continues** in movement in different poses.

Step 4 - Available moving human recognition methods still **has** error in classification and need a huge amount of examples which may still be incomplete.

Step 2 - Human face and body posture characteristics such as size of the eyes, nose, mouth, or fat or thin bodies, **are important** visual features in different poses for personal identification to increase accuracy of human recognition system, and it **is still rare** in researches. [Sinta 1 - 3, Move 1, Sentence 1 - 5]

The data above showed the first sentence which was considered as Step 1 by showing the significance of research, second and fourth sentences showed Step 4 – *Identifying research gap* because they stated the previous research development and current condition, and the third sentence stated the key terms regarding tracking process which was used in the abstract.

4.1.4 The realizations of language features

In this study, language features, consisting of voice and tenses, were also identified concisely.

4.1.4.1 Tenses

In the abstracts, each sentence used different tenses depending on the Moves. The tenses which were analyzed are simple past, past continuous, past perfect, simple present, present continuous, present perfect, simple future, and future continuous. However, the author simplified the result and divided the findings into past tenses, present tenses, and future tenses.

In all Sinta levels and all Moves, it resulted that present tense had the highest percentage. It showed that there was no difference between the level of Sinta or moves sequence and the tenses which were used in the abstracts. The ratio of difference between present tense and the other tenses were quite unbalanced. Future tenses showed the very least occurrences in all Sinta and moves. The well-balanced ratio for present tense and past tense was seen only in Move 4 - Sinta 3, 4, and 6, Move 2 - Sinta 3, and Move 5 - Sinta 3.

	SINTA 1						SINTA 2						SINTA 3					
	P	%	Pr	%	Ft	%	P	%	Pr	%	Ft	%	P	%	Pr	%	Ft	%
M1	10	12%	73	86%	2	2%	4	7%	50	89%	2	4%	8	13%	55	86%	1	2%
M2	4	21%	15	79%	0	0%	6	32%	12	63%	1	5%	7	41%	10	59%	0	0%
M3	15	23%	47	73%	2	3%	11	20%	44	79%	1	2%	15	33%	29	64%	1	2%
M4	9	29%	22	71%	0	0%	15	48%	16	52%	0	0%	9	43%	12	57%	0	0%
M5	3	21%	10	71%	1	7%	4	36%	7	64%	0	0%	3	43%	4	57%	0	0%

P = Past, Pr = Present, Ft = Future

Table 4.10.1 *Tenses distribution in each Moves in each Sinta level*

	SINTA 4						SINTA 5						SINTA 6					
	P	%	Pr	%	Ft	%	P	%	Pr	%	Ft	%	P	%	Pr	%	Ft	%
M1	3	5%	56	89%	4	6%	3	6%	44	92%	1	2%	5	6%	73	92%	1	1%
M2	1	5%	16	84%	2	11%	3	16%	13	68%	3	16%	4	21%	14	74%	1	5%
M3	12	24%	35	71%	2	4%	10	19%	37	71%	5	10%	9	18%	38	76%	3	6%
M4	8	36%	12	55%	2	9%	3	16%	16	84%	0	0%	4	40%	6	60%	0	0%
M5	1	25%	3	75%	0	0%	0	0%	9	100%	0	0%	0	0%	2	100%	0	0%

P = Past, Pr = Present, Ft = Future

Table 4.10.2 *Tenses distribution in each Moves in each Sinta level*

The following examples show the implementation of tenses in Move 1.

[Example 4.15]

The problems **remain** in face recognition issue is about lighting, expressions and poses. [Sinta 1 – 1, Move 1, Sentence 2]

[Example 4.16]

Fragile image watermarking **could be used** to authenticate a digital image due to modification or altering. [Sinta 1 – 2, Move 1, Sentence 1]

Both 4.15 and 4.16 showed Move 1 which should be describing the general terms or the research significance. Despite the function, they both appeared to have different tenses, by using “remain” as a signal for present tense and “could be used” as a signal for past tense.

The following examples show the implementation of tenses in Move 2.

[Example 4.17]

This study **will compare** the processes that use segmentation and without using segmentation to know the various segmentation information in introduction of human blood type image. [Sinta 4 – 6, Move 2, Sentence 4]

[Example 4.18]

The design of this system **aims to provide** information on the level of air quality derived from motor vehicle exhaust gases and recorded movement activities around

the student's residence environment using IoT technology. [Sinta 4 – 8, Move 2, Sentence 5]

The data 4.17 and 4.18 showed the two kinds of tenses used in Move 2 – *Purpose*. As a purpose, the data 4.17 used "will compare" as signal words which indicated future tense but also showed the purpose of the research. Data 4.18 used signal words "aims to provide" which considered as present tense and it was clear that the aim of the research was explained.

The following examples show the implementation of tenses in Move 3.

[Example 4.19]

The data analysis **had been performed** on FILKOM student's thesis work which generally develops software that has main obstacle in the management. [Sinta 3 – 16, Move 3, Sentence 4]

[Example 4.20]

The Fast Fourier Transform method **is used** for feature extraction and Bayes method is used to calculate the sound probability value between the train data and test data, then Bayes Method is used to determine the result of the introduction of some previously stored train data. [Sinta 5 – 4, Move 3, Sentence 5]

The data 4.19 and 4.20 showed that Move 3 can be manifested in both past and present tenses. Data 4.19 had signal words "had been performed" which was considered past perfect and it described data analysis. Data 4.20 showed signal words "is used" which was present tense and it explained about the method.

The following examples show the implementation of tenses in Move 4.

[Example 4.21]

The result **shows** that word vectorization indeed significantly increases the NMT models performance, and Long-Short Term Memory (LSTM) with attention mechanism has the highest BLEU scores equal to 20.86. [Sinta 3 – 18, Move 4, Sentence 6]

[Example 4.22]

In addition to producing 12 strategic objectives, in this study also **produced** 27 key performance indicators that will be used as lecturer performance at STMIK Primakara. . [Sinta 6 – 10, Move 4, Sentence 8]

The data 4.21 and 4.22 showed the findings section which used present tense with signal word “shows” and past tense with word “produced”. Both showed the results of the research in the abstract.

The following examples show the implementation of tenses in Move 5.

[Example 4.23]

According to that, the authors **tried** a face recognition approach using contour gradation on the face color. Variables **tested** in this study **was** Threshold Contour error, X error and Size error, then those variables are tested against the image with light illumination, yaw face and variation amount of contour lines. [Sinta 1 - 1, Move 3, Sentence 6 - 7]

[Example 4.24]

The tools used **are** MQ-7 sensor, NodeMCU microcontroller and web camera. The database system **uses** an MSQL database and graphical data information in a web-based application. Each gas sensor **has** a different level of accuracy, to measure the accuracy of the MQ-7 sensor using calculations from the Mean Absolute Percentage Error (MAPE) formula. [Sinta 4 - 8, Move 3, Sentence 6 - 8]

The data 4.23 and 4.24 showed the two versions of used tenses in the method section. Mostly, it used present tense, but some of the abstracts used past tense.

4.1.4.2 Voice

This study also analyzed the voices which were divided into active voice and passive voice. Based on the analysis of language features, active voice occurred the most frequently in all Sinta levels. This study also identified based on the Moves for the voice occurrences, it resulted the same, active voice had the tendency to dominated the abstracts’ sentences. The percentage differences of active and passive voice occurrences were quite unbalanced in each move or Sinta level. There

was no passive voice found in Move 4 - Sinta 3 and Move 5 - Sinta 3. The only dominance of passive voice was shown in Move 4 - Sinta 4.

The following tables below illustrate the findings which have been explained.

	ACTIVE	PASSIVE
M1	79.60%	20.40%
M2	79.46%	20.54%
M3	68.67%	31.33%
M4	91.79%	8.21%
M5	72.34%	27.66%

Table 5.1 *Voices distribution in each Moves for all Sinta levels*

	ACTIVE	PASSIVE
SINTA 1	75.81%	24.19%
SINTA 2	77.46%	22.54%
SINTA 3	79.87%	20.13%
SINTA 4	82.80%	17.20%
SINTA 5	73.47%	26.53%
SINTA 6	75.63%	24.38%

Table 5.2 *Voices distribution in each Sinta for all Moves*

	SINTA 1				SINTA 2				SINTA 3				SINTA 4				SINTA 5				SINTA 6			
	A	%	P	%	A	%	P	%	A	%	P	%	A	%	P	%	A	%	P	%	A	%	P	%
M1	61	70%	26	30%	47	84%	9	16%	52	81%	12	19%	53	84%	10	16%	42	88%	6	13%	61	77%	18	23%
M2	16	84%	3	16%	14	74%	5	26%	12	71%	5	29%	17	89%	2	11%	16	84%	3	16%	14	74%	5	26%
M3	45	70%	19	30%	40	71%	16	29%	31	69%	14	31%	38	78%	11	22%	27	52%	25	48%	36	72%	14	28%
M4	29	94%	2	6%	25	81%	6	19%	21	100%	0	0%	21	95%	1	5%	18	95%	1	5%	9	90%	1	10%
M5	12	86%	2	14%	8	73%	3	27%	7	100%	0	0%	1	25%	3	75%	5	56%	4	44%	1	50%	1	50%

Table 5.3 *Voices distribution in each Sinta and each Moves*

The following examples illustrate the manifestation of voices in Move 4.

[Example 4.25]

Despite of that, SIFT **reaches** around 5% better accuracy in rotated and scaled dataset.[Sinta 2 - 6, Move 4, Sentence 6]

[Example 4.26]

The highest score **was achieved** with static word embeddings learned separately over time, called QT-W2V-Rank, which is 66% in average precision and 68% in early precision. [Sinta 2 - 8, Move 4, Sentence 6]

The data showed signal words of findings section with word “reaches” (4.25) in active voice and “was achieved” (4.26) in passive voice. Both had the same context of declaring the result of finding in abstract.

The following examples illustrate the manifestation of voices in Sinta 5 – Move 3 as the most balanced occurrence of voices.

[Example 4.27]

Testing **is done** on voice in the database and the voice is not in the database. [Sinta 5 - 4, Move 3, Sentence 7]

[Example 4.28]

The implementation of the Learning Management System **generally uses** an internet connection in the learning process, but in certain regions in Indonesia there is still a campus environment that has not good internet connection. [Sinta 5 - 6, Move 3, Sentence 4]

The data 4.27 manifested as the passive voice and 4.28 as the active voice. Both had the same contexts, as a method part which explained about procedure and context.

4.2 Discussion

In some aspects, this study found several relations in Sinta levels research article abstracts for moves, steps, and tenses, but not critical. Also, some differences

occurred compared to other field of abstracts. Computer Science field seemed to be the reasons why the result or findings were found differently.

4.2.1 Moves and Steps

Based on the analysis, the data showed that different Sinta levels resulted in different move dominance, however there was no relation for the descended level sequence or ascended one. In Sinta 1, Sinta 3, Sinta 4, and Sinta 6, Move 1 – *Introduction or Background* became the most frequent move. A different result showed in Sinta 2 and Sinta 5, the highest occurrence was Move 3 - *Method*. Despite the two different results, overall, in all Sinta, Move 1 and Move 3 became the two most occurred moves. Hyland (2000) pointed out the importance of Move 1 to establish context of the research and its motivation.

The result of move occurrences which have Move-1 and Move-3 as the most dominant was also supported by Gani (2021) that found Move 1 - *Introduction* the most occurring Move in the hard science field. Computer Science itself is considered hard science. Seiradakis (2023) also concluded that Computer Engineering abstracts often utilized a variety of rhetorical strategies and staged to build their arguments and persuade the readers in method section (Move 3).

Different results from previous studies were discovered. Maswana et al. (2015) researched about five engineering fields including computer science and found that background and purpose moves were dominant. San and Tan (2012) which conducted a research in Computer and Communication Systems Engineering also showed a different result using Santos' (1996) framework. The result was topic generalization and purpose moves which were dominant.

The move analysis was not only about the occurrence but also the salience. The move salience analysis referred to Kanoksilapatham (2005). The result of move salience was not showing any difference, but Sinta 6 showed an unusual result for Move 4 and Move 5 saliences. Move 1 in Sinta 1 to 4 occurred 100% which means obligatory, but in Sinta 5 and 6, it was considered conventional. All of Move 2 in all Sinta levels were considered conventional. In Move 3, an obligatory (100%) result was shown in Sinta 4, and for the other Sinta levels it was considered conventional. Move 4 was considered as conventional in Sinta 1 to 5, however in

Sinta 6, it was considered optional with 45% occurrence. The difference between Sinta 6 occurrence and other Sinta levels was unbalanced, it was 30% - 50%. All Sinta levels were considered as optional for Move 5. In this case, Sinta 6 showed an unusual number of salience, with only 10% occurrence.

The move saliences finding was supported by the previous study, Nurhayati (2022), which also found Move 1 and Move 3 as conventional and obligatory. Based on Nurhayati that used data from Computer Science journals in Sinta 1 and Sinta 2, the findings were aligned to each other. In the study, Move 5 was considered as optional as well. However, there was a difference for Move 2, Nurhayati (2022) considered it as obligatory, but this study found it conventional.

According to Ramadhini et al. (2020)**,** Move 1 was considered as optional. Move 3 of the study resulted as obligatory which supported the finding in this study about Move 3 - Sinta 4. Another difference regarding Move 5, it was considered conventional in Ramadhini et al. (2020) meanwhile in this study, it was considered as optional. The different results were probably because of the research abstract fields which were analyzed. Even though Computer Science was included in hard science, Ramadhini et al. (2020) only used samples from sports and health education, technology and vocational skills education, mathematics and natural science education, and economics and business education. So, in this case, there was a probability that different fields may result in different occurrences of move salience.

The pattern which was analyzed by the move-based configuration showed a result that 1(n) - 2 - 3 (n) - 4 patterns appeared 12 times. Move 5 – *Conclusion* was not included in the pattern and it is aligned with Hyland (2004) that Move 5 often excluded. Based on the journals that were identified, Sinta 1 and Sinta 2 were used in Nurhayati (2022) and the research found the most frequent pattern was M1-M2-M3-M4-M5. This study found the M1-M3-M4-M2-M5 pattern which occurred the most. In Sinta 5, this study found M1-M3-M2-M4-M5 as a pattern and in Sinta 2, the pattern was M3 - M1 - M4 - M2 - M5. Gani et al. (2020) also found in hard science abstracts, the pattern was M1-M2-M3-M4-M5. The pattern is also supported by Seiradakis (2023); Maswana et al. (2015), the study found that abstracts in Computer Engineering field included all of the moves. Not only that,

Computer Engineering abstract also includes implications, comparisons, and gap (Seiradakis, 2023).

Steps were also analyzed and we can divide the result into Move-centric and Sinta-centric. The steps were divided only in Move 1, Move 3, and Move 5, because Move 2 and Move 4 were considered not to have step branches. From Move 1 in all Sinta levels, Step 1 - *Arguing for topic significance* became the most frequent step. Move 3 showed that Step 7 - *Describing procedure and context* occurred the most. It is aligned with Kurniawan et al. (2019) and Sabila (2021).

Besides the occurrence of steps, the salience of steps was also taken into account. The salience shows that Step 1- *Arguing for topic significance* and Step 7 - *Describing procedure and context* were considered as conventional and obligatory. The step salience findings in this study were different compared to Gani (2021), which stated that in natural science and hard science, Step 2 - *Making topic generalization* had a higher percentage than Step 1. It has a possibility that the interdisciplinary fields of the research article abstracts also played a role in the dominance of occurrences. As Gani (2021) mentioned, hard science abstract did not use Step 10 - *Stating limitation* at all, this study also found that Computer Science research article abstracts, as a part of hard science, had found zero use of Step 10. From the Sinta levels perspective, there is a difference in step saliences percentage, particularly steps in Move 5.

The differences in results between previous studies and current research were high likely because the disciplines were not exactly the same. Also, the research article type and nationality authors were different. There were some studies which used international journal as the data to be analyzed, meanwhile current research used national journal data.

4.2.2 Tenses and Voice

Linguistic features which were analyzed are tenses and voice. This study identified the tenses of the research abstracts sentences in each move and Sinta level. The identified tenses were simple past, simple future, simple present, past continuous, present continuous, future continuous, past perfect, and present perfect, however

the author simplified the analysis in dividing the tenses into three categories: past tenses, present tenses, and future tenses.

The analysis result showed that the tenses used mostly in all Sinta levels were present tenses, which include simple present tense, present continuous, and present perfect. Move 1 to Move 5 in all Sinta levels also resulted the same, present tenses intended to dominated the sentences. The difference between past tenses, present tenses, and future tenses was unbalanced. Salager-Meyer (1992) stated that present tense was used to highlight the discussion in conclusion, recommendation, and data, also to generalize the terms. Meanwhile, past tense was used to indicate purpose, method, and result.

Nurhayati (2023) also supported this study's finding, simple present tense was inclined to be frequent especially in Move 2 – *Purpose*. Swales and Feak (2009) also supported that Move 1 usually inclined to use present tense. Move 3 – *Method* usually used active voice and present tense (Nurhayati, 2023).

This study found something different than Gani (2021) for tenses occurrence. Gani (2021) stated that hard science mostly used past tense, this study found that present tense had the highest percentage of usage. Gani et al. (2020) also found a different result, present tense and past tense were equally occurred (50%). Meanwhile, the use of tense in hard science was both past and present tense, but the difference was not unbalanced (Ramadhini et al., 2020).

It is in line with Gani (2021), hard science abstracts preferred to use present tense. Also, according to Amnuai (2019) and Tseng's (2011), the studies supported this research finding by stating present tense is usually used in Move 1 - *Introduction*, Move 2 - *Purpose*, and Move 5 - *Conclusion*.

The voices that the author analyzed were active voice and passive voice. The results showed that active voice was the most frequently in all Sinta levels with unbalanced differences between active and passive voice. In each move, it had the same result, active voice had the most number of occurrences. This study found that passive voice appeared in Move 3 – *Method* and it is aligned with Hamp-Lyons (2010), passive voice is considered as the objective view and it is used in academic writing. Active voice becomes the international standard ISO 21421976 (E) to be used in order to give more clarity and concise context in the text.

The result was in line with Ramadhini et al. (2020) in the hard science field, the data showed that the abstracts were written in active voice for introduction, method, and conclusion sections. Gani (2021) also supported the dominance of active voice in hard science abstracts. Gani et al. (2020) showed different results, in hard science thesis abstracts the voices had the same percentage, 50%. There was no difference. However, in hard science dissertations the unbalanced difference occurred between active voice and passive voice.