

Modeling Social and Affective Factors in the Writing Process using the PLS-SEM Approach

Nur Huslinda Che Mat^{1*}, Noor Hanim Rahmat², Mazlin Azizan³, Norazrin Zamri⁴, Suhaniz Ayuni Shafie⁵ Rahayu Kuswardani⁶

^{1,2,3}Akademi Pengajian Bahasa, Universiti Teknologi MARA, Shah Alam, Malaysia

⁴Akademi Pengajian Bahasa, Universiti Teknologi MARA, Dengkil, Malaysia

⁵Kolej Poly-Tech MARA, Kota Bharu, Malaysia

⁶Universitas Negeri Surabaya, Surabaya, Indonesia

*Corresponding Author

DOI: <https://doi.org/10.47772/IJRISS.2026.100600052>

Received: 17 May 2026; Accepted: 22 May 2026; Published: 17 June 2026

ABSTRACT

Writing is a multifaceted process shaped by cognitive, social, and affective dimensions. Although previous research has largely focused on cognitive strategies in writing development, the integrated role of social and affective factors across different stages of the writing process has received comparatively limited attention. This study examines how social and affective factors influence three key stages of the writing process: planning, translating, and reviewing. A quantitative research design was adopted, with data collected from 109 respondents through a questionnaire. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4, incorporating both measurement and structural model evaluations. The findings reveal that affective factors significantly influence all three stages of the writing process: planning, translating, and reviewing. In contrast, social factors were found to significantly affect only the planning stage, while no significant relationships were identified with the translating and reviewing stages. Effect size analysis indicates that affective factors exert a moderate effect on planning and a strong effect on both translating and reviewing, highlighting the important role of learners' motivation, confidence, and emotional regulation in writing development. Conversely, social factors demonstrate only a small effect on planning. The predictive relevance assessment further confirms that the model possesses satisfactory predictive capability for the endogenous constructs. Additionally, the Importance-Performance Map Analysis (IPMA) identifies affective factors as critical areas that warrant greater attention in efforts to enhance writing outcomes. Overall, the findings underscore the significance of learners' emotional engagement in the writing process. The study suggests that educators should foster supportive learning environments that build confidence, reduce writing anxiety, and enhance motivation in writing activities. Future research may further investigate the combined influence of cognitive, social, and affective factors on writing development across diverse educational contexts to achieve a more comprehensive understanding of the writing process.

Keywords: affective, effect, influence, PLS-SEM, social, writing process

INTRODUCTION

Writing is widely recognized as a complex process that involves the interaction of multiple cognitive, social, and affective elements. Previous research has primarily emphasized the cognitive processes involved in writing, such as planning, organizing ideas, and revising written texts. For instance, studies have shown that cognitive skills and strategies play a significant role in shaping writing performance and improving text quality. Research on narrative writing indicates that components of the writing process and cognitive abilities

such as spelling, reading skills, selective attention, and oral language competence significantly influence the quality of students' written products (Andriani et al., 2022). Similarly, the use of metacognitive strategies and feedback systems has been shown to enhance writing performance by supporting learners' ability to monitor and regulate their writing processes (Feng, 2023). Other studies have also highlighted the effectiveness of cognitive strategies such as mind mapping, elaboration, and metacognitive regulation in helping students organize ideas and produce well-structured texts (Razak, 2025). Furthermore, metacognitive instruction and strategy-based approaches have been found to positively influence learners' writing processes, particularly in planning, translating, and revising written texts (Huang & Zhang, 2022; Khezzrinejad et al., 2023). While these studies demonstrate the importance of cognitive and metacognitive processes in writing development, research has also acknowledged that writing is not solely a cognitive activity but is influenced by broader contextual and personal factors.

In recent years, increasing attention has been given to the role of social and affective factors in shaping learners' writing experiences and outcomes. Emotional variables such as motivation, anxiety, and self-efficacy have been shown to influence students' engagement and confidence in writing tasks. For example, research indicates that writing self-efficacy and attitudes toward writing contribute significantly to students' writing performance, while anxiety may hinder learners' ability to express ideas effectively (Deb, 2018; Hidayah Pratama et al., 2018). Similarly, studies examining writing performance among Malaysian students reveal that affective factors such as writing self-efficacy and writing anxiety play an important role in shaping writing outcomes (Shanmugam et al., 2023). In addition to affective influences, social factors such as peer interaction, cultural background, and social networks have also been found to affect learners' engagement in writing development. For instance, social influence and collaborative learning environments can encourage students to improve their writing skills and increase their confidence in writing tasks (Nisa & Wani, 2024). Research on adult L2 learners also suggests that social and social-psychological factors indirectly influence writing development by shaping learners' exposure to and use of the target language within their social environments (Bril et al., 2025). Moreover, in online learning contexts, social presence and interaction among learners have been identified as important elements that facilitate engagement and learning in writing instruction (Stewart, 2021). Despite these insights, many existing studies have examined cognitive, social, or affective factors independently rather than investigating their combined influence on the writing process. Furthermore, limited research has applied advanced analytical techniques to explore the structural relationships among these variables. Therefore, there is a need to examine how social and affective factors interact within the writing process, particularly through comprehensive analytical approaches such as Partial Least Squares Structural Equation Modeling (PLS-SEM). This study aims to address this gap by exploring the relationships among social and affective factors in the writing process and their contribution to students' writing development. The research questions (Table 1) will be answered using SmartPLS analysis using both measurement and structural models. The positioning of research hypotheses is also presented in Table 1.

Table 1 - Presentation of Research Objectives, Questions, and Hypotheses

RO	RQ	RESEARCH HYPOTHESIS
To investigate if there is a significant relationship between Social factors and Planning stage	Is there a significant relationship between Social factors and Planning stage?	Ho1: There is no significant relationship between Social factors and Planning stage
To investigate if there is a significant relationship between Social factors and Translating stage	Is there a significant relationship between Social factors and Translating stage?	Ho2: There is no significant relationship between Social factors and Translating stage
To investigate if there is a significant relationship between Social factors and Reviewing stage	Is there a significant relationship between Social factors and Reviewing stage?	Ho3: There is no significant relationship between Social factors and Reviewing stage

To investigate if there is a significant relationship between Affective factors and Planning stage	Is there a significant relationship between Affective factors and Planning stage?	Ho4: There is no significant relationship between Affective factors and Planning stage
To investigate if there is a significant relationship between Affective factors and Translating stage	Is there a significant relationship between Affective factors and Translating stage?	Ho5: There is no significant relationship between Affective factors and Translating stage
To investigate if there is a significant relationship between Affective factors and Reviewing stage	Is there a significant relationship between Affective factors and Reviewing stage?	Ho6: There is no significant relationship between Affective factors and Reviewing stage
To investigate if there is a significant effect between Social factors and the writing Process	Is there a significant effect between Social factors and the writing Process?	Ho7: There is no significant effect between Social factors and the writing Process
To investigate if there is a significant effect between Affective factors and the writing Process	Is there a significant effect between Affective factors and the writing Process?	Ho8: There is no significant effect between Affective factors and the writing Process

LITERATURE REVIEW

THEORETICAL FRAMEWORK

The two anchor theories that support this study are (i) the writing process by Flower & Hayes (1981). This theory supports the conversion of the three processes: planning, translating, and reviewing in the model. This theory also supports the variable cognitive factors in the model. Next, the theory of the Sociocultural theory supports the variable “social” in the model.

The Writing Process Model proposed by Flower & Hayes, (1981) views writing as a complex cognitive activity that involves multiple interconnected mental processes rather than a simple linear task. According to this model, writing consists of three main components: the task environment, the writer’s long-term memory, and the writing processes. The task environment includes factors such as the writing topic, audience, and the text produced so far, which influence the writer’s decisions during writing. The writer’s long-term memory contains knowledge about the topic, the audience, and rhetorical conventions that guide the development of ideas. The core of the model is the writing process itself, which involves three recursive stages: planning, translating, and reviewing. During the planning stage, writers generate ideas, organize them, and set goals for their text. In the translating stage, writers convert their ideas into written language. The reviewing stage involves evaluating and revising the text to improve clarity, coherence, and effectiveness. Importantly, Flower & Hayes (1981) emphasize that these stages are not linear but recursive, meaning writers may move back and forth between planning, writing, and revising throughout the writing process. This model highlights the importance of cognitive processes such as problem-solving, decision-making, and self-monitoring in producing effective written communication.

This theory also views writing as a complex cognitive activity involving multiple mental processes. According to this model, writing consists of three major components: planning, translating, and reviewing. During planning, writers generate ideas, organize them, and set goals. Translating refers to turning ideas into written text, while reviewing involves evaluating and revising the text. The model also highlights the role of long-term memory and the task environment, such as the audience and the topic. Importantly, the process is recursive, meaning writers constantly move back and forth between these stages. This theory strongly supports the idea that writing requires problem-solving and strategic thinking.

Sociocultural theory is proposed by Lev Vygotsky (1978), emphasizes that learning and cognitive development occur through social interaction and cultural context. According to this theory, knowledge is constructed through interactions with more knowledgeable individuals, such as teachers, peers, or members of a community. In the context of writing, sociocultural theory suggests that writing skills develop through collaborative activities, guided instruction, and participation in social environments where language is actively used. Through dialogue, feedback, and shared learning experiences, learners gradually internalize writing strategies and conventions. A key concept in this theory is the Zone of Proximal Development (ZPD), which refers to the gap between what learners can accomplish independently and what they can achieve with guidance from others. In writing instruction, scaffolding provided by teachers or peers such as modeling writing techniques, offering feedback, and engaging in peer review helps learners improve their writing abilities. Therefore, sociocultural theory highlights that writing development is not solely an individual cognitive activity but is strongly influenced by social interaction, cultural practices, and collaborative learning environments (Vygotsky, 1978).

Past Studies

Past Studies on Social Factors in Writing

Research on writing increasingly highlights the influence of social factors in shaping students' writing development, engagement, and performance. Social influences can affect learners' attitudes toward writing, their exposure to language use, and their willingness to improve their writing abilities. For instance, (Nisa & Wani, 2024) examined the challenges faced by female Indian students in English writing and identified several key factors influencing writing development, including social influence, grammatical issues, technical difficulties, and learners' intentions to improve their writing skills. Their findings indicated that social influence plays a significant role in shaping students' confidence and motivation to enhance their writing abilities. The study further revealed that demographic variables and social interactions contribute to students' perceptions of their writing competence. Based on these findings, the authors emphasized the importance of creating collaborative learning environments and guided communication opportunities to support students in improving their writing skills. Such social learning contexts can help reduce barriers to writing development by encouraging peer interaction and active engagement in the writing process (Nisa & Wani, 2024).

Similarly, the role of social and social-psychological factors in second language writing development has been explored in studies focusing on adult learners. Bril et al., (2025) investigated how social background variables influence L2 writing proficiency among adult learners of Dutch. Their findings indicated that social and social-psychological variables are not directly related to overall writing proficiency; however, they influence writing outcomes indirectly through learners' exposure to the target language. In particular, factors such as cultural identification and social networks were found to affect the extent to which learners use and engage with the second language in real-life contexts. This suggests that social environments play an important role in shaping opportunities for language practice, which ultimately influences writing development. In the context of online writing instruction, social interaction is also essential for fostering meaningful learning experiences. Stewart (2021) highlighted the importance of social presence in online writing environments, emphasizing that students' sense of connection and comfort with peers and instructors contributes to more effective learning interactions. The study argued that simply encouraging students to participate is not sufficient; instead, meaningful social engagement and supportive learning environments are necessary to promote collaboration and active participation in writing tasks. Taken together, these studies demonstrate that social factors such as peer interaction, social networks, cultural context, and learning environments significantly shape learners' writing experiences and engagement in writing development (Bril et al., 2025; Nisa & Wani, 2024; Stewart, 2021).

Past Studies on Affective Factors In Writing

Affective factors play an important role in influencing students' writing performance, particularly in second language learning contexts. Several studies highlight how psychological elements such as motivation, self-efficacy, attitude, and anxiety shape students' engagement and outcomes in writing tasks. For instance,

Kurniasih et al., (2022) examined the relationship between several affective variables and students' writing performance in an online learning environment during emergency remote teaching. The findings revealed that motivation was the only affective factor at a high level among students, while self-efficacy, attitude, and anxiety were at moderate levels. More importantly, the study found that motivation had a significant effect on students' writing performance in the online writing module, whereas the other factors did not show a strong direct influence. The results suggest that students who possess higher motivation are more likely to engage actively in writing tasks and perform better in online writing courses. Consequently, the authors emphasize the importance of creating a supportive and non-threatening classroom environment to strengthen students' motivation and encourage their participation in writing activities (Kurniasih et al., 2022).

Similarly, the significance of affective variables in writing development is highlighted in studies that focus on self-efficacy, anxiety, and attitude toward writing. Deb (2018) explored the impact of these affective factors on second language learners' writing performance through a personal narrative and tutoring experience with an ESL learner. The study supports the concept of the affective filter hypothesis, which suggests that emotional barriers such as anxiety can hinder language learning and writing development. The findings demonstrate that when learners experience lower anxiety and stronger self-confidence, they are more capable of expressing their ideas effectively in writing. Deb (2018) further emphasizes that teachers should provide encouragement, individualized support, and effective feedback to help learners overcome emotional barriers in writing. In a similar vein, Hidayah Pratama et al., (2018) examined a predictive model of affective factors in EFL students' writing performance and found that writing anxiety, self-efficacy, and writing attitude collectively contributed significantly to writing outcomes. Among these factors, self-efficacy and attitude were shown to have a stronger influence on students' writing performance than anxiety. The study also revealed that students' attitudes toward writing are largely shaped by how confident they feel about their writing abilities. Taken together, these studies demonstrate that affective factors are critical components in writing development, as learners' motivation, confidence, and attitudes significantly influence their engagement and performance in writing tasks (Deb, 2018; Hidayah Pratama et al., 2018; Kurniasih et al., 2022).

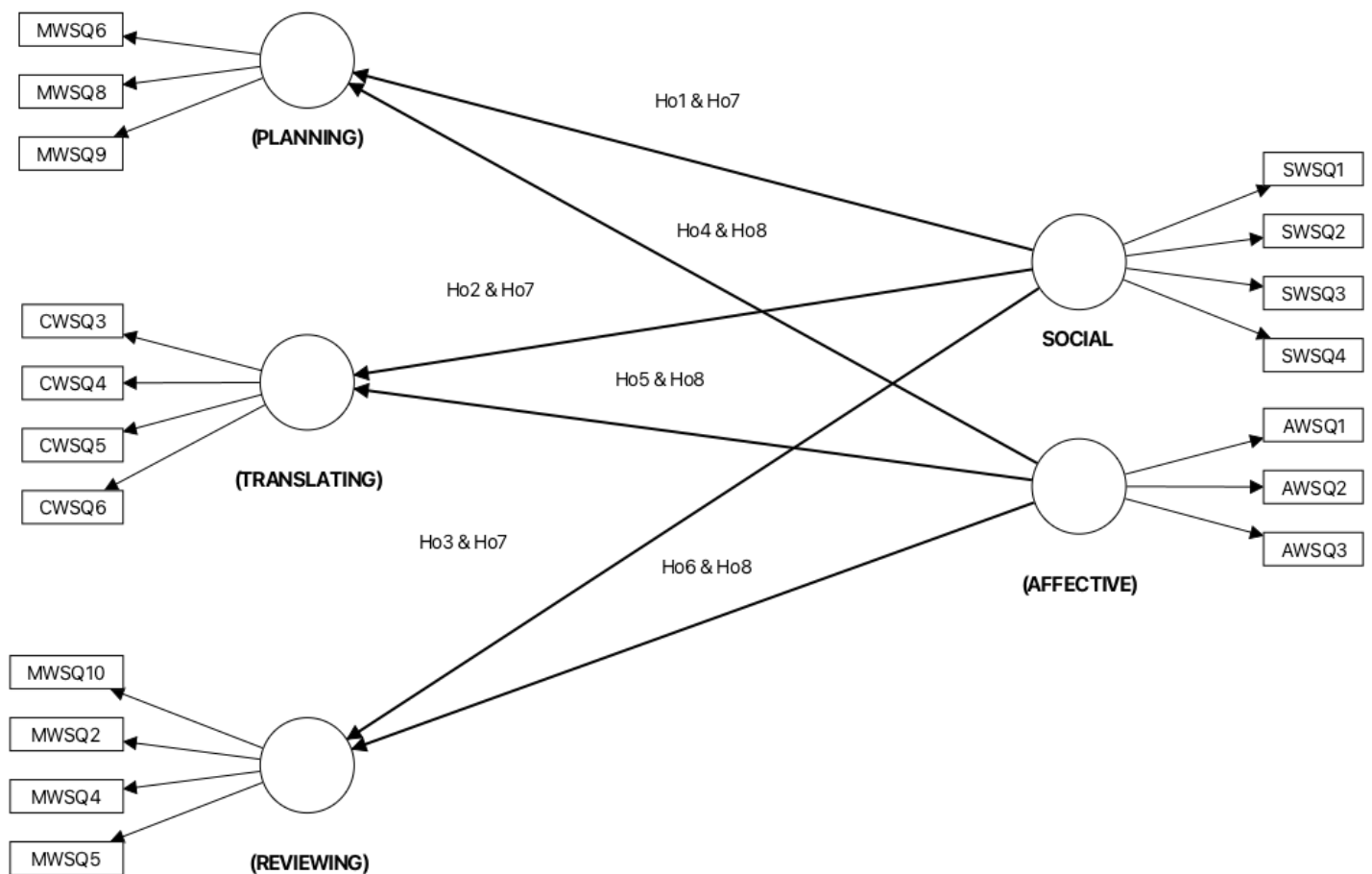
CONCEPTUAL FRAMEWORK AND PROPOSED MODEL OF THE STUDY

The conceptual framework of this study is primarily grounded in the Cognitive Process Theory of Writing proposed by Flower & Hayes (1981), which conceptualizes writing as a recursive cognitive activity involving three major processes: planning, translating, and reviewing. According to this theory, planning refers to the stage where writers generate ideas, organize information, and set goals before composing the text. Translating involves transforming these planned ideas into written language, requiring writers to regulate effort and maintain focus while constructing meaningful sentences and paragraphs. Reviewing represents the evaluation stage in which writers assess, revise, and refine their written output to improve clarity, coherence, and accuracy. These processes do not occur linearly but interact dynamically throughout the writing process. In the present study, these cognitive writing processes are operationalized through indicators derived from the instrument developed by Raoofi et al. (2017). As illustrated in Figure 1, the metacognitive strategies represent the planning and reviewing stages, measured through indicators such as MWSQ items, while effort regulation reflects the translating stage, represented by CWSQ items. These indicators capture students' ability to regulate their thinking processes, organize ideas, sustain effort, and revise written work during the writing process. Thus, the framework assumes that effective writing performance is supported by the writer's ability to strategically manage these cognitive processes (Flower & Hayes, 1981; Raoofi et al., 2017).

In addition to cognitive processes, the framework incorporates social and affective factors that influence students' engagement and performance in writing. The social dimension of the model is grounded in Vygotsky (1978) Sociocultural Theory, which emphasizes that learning occurs through interaction with others and within specific cultural contexts. According to this theory, writing development is not solely an individual activity but is strongly shaped by social interaction, collaboration, and guidance from more knowledgeable individuals, such as teachers or peers. Through these interactions, learners internalize writing strategies and gradually develop higher-level writing skills. As depicted in Figure 1, social factors are represented through indicators such as SWSQ items, which capture aspects of collaborative learning, social engagement, and peer interaction during the writing process. At the same time, the framework also includes affective factors, represented by

AWSQ indicators, which reflect learners' emotional states, motivation, and confidence while performing writing tasks. These indicators are also derived from the instrument developed by Raoofi et al. (2017). Affective factors play an important role in regulating learners' willingness to participate in writing activities and persist through challenges. Therefore, the conceptual framework proposes that cognitive processes (planning, translating, reviewing), social interaction, and affective engagement collectively influence the writing process. By integrating the cognitive model of writing Flower & Hayes (1981) with sociocultural perspectives on learning (Vygotsky, 1978) this framework provides a comprehensive structure for examining the relationships among these variables using PLS-SEM analysis, as illustrated in Figure 1.

Figure 1- The Conceptual Framework –Cognitive and Affective Factors in the Writing Process



METHODOLOGY

Research Design

This study employs a quantitative design. The research goal is to explore an extension of an existing theory/predict a theory. The model (Figure 1) chosen for this study is a hierarchical component model, Type II, which utilizes a combination of reflective-reflective models. According to Fornell and Bookstein (1982), a reflective model is employed when the construct is a trait and explains the indicators.

Population And Sample

The demographic analysis is presented in percentages. According to Ziegenfuss et al., (2021), researchers report demographic data in percentages to establish sample representatives and allow for generalizability to a larger population. Presenting in percentages also provides an overview of participants' characteristics and offers a clear and understandable picture of the sample makeup. 109 respondents participated in this study. Hair et al. (2011) suggest that a general minimum sample size of 100 for PLS-SEM is considered reasonable.

Table 2- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	26%
		Female	74%
2	Level	Bachelor	69%
		Post-Grad	31%

The demographic profile of the respondents presents an overview of the participants' gender and educational level. Based on the data collected, the majority of the respondents were female, representing 74% of the sample, while 26% were male. This indicates that female participants formed a significantly larger proportion of the respondents in the study. The higher percentage of female respondents suggests that female students were more represented in the sample population, which may reflect the enrollment distribution within the selected academic context. In terms of educational level, most of the respondents were Bachelor's degree students, accounting for 69% of the participants. Meanwhile, 31% of the respondents were postgraduate students, indicating that nearly one-third of the sample consisted of individuals pursuing advanced studies. The distribution of respondents across these educational levels suggests that the study captured perspectives from both undergraduate and postgraduate learners, allowing for a broader representation of academic experiences in writing. Overall, the demographic data show that the sample was predominantly composed of female and undergraduate students, while still including a notable proportion of postgraduate participants to provide additional diversity in educational background.

Instrument

Table 3 presents the distribution of items included in the questionnaire. The instrument used a 5-point Likert scale, with scale 1 being "never". Scale 2 represents rarely. Scale 3 represents sometimes, while scale 4 is often, and scale 5 is always.

Table 3- Distribution for Item in Instrument

SECTION	WRITING STRATEGY	CONSTRUCT	Indicator
B	Metacognitive	Planning	4
		Reviewing	6
C	Effort Regulation	Translating	5
D	Cognitive		6
E	Social		4
F	Affective		3
			26

The questionnaire, adapted from Raoofi et al., (2017) comprises variables representing the model formed. Explain all the variables and constructs in the instrument.

Data Collection and Data Analysis

Data is collected via a Google Form. The data is then analyzed using SmartPLS 4 through two main stages. As suggested by Hair et al., (2017) data analysis is done at two levels: the measurement and structural model. The first stage is the measurement model, which measures the outer model. The second stage is the structural model, which measures the inner model. The analyzed data is used to answer the research questions and also to confirm the model chosen.

FINDINGS

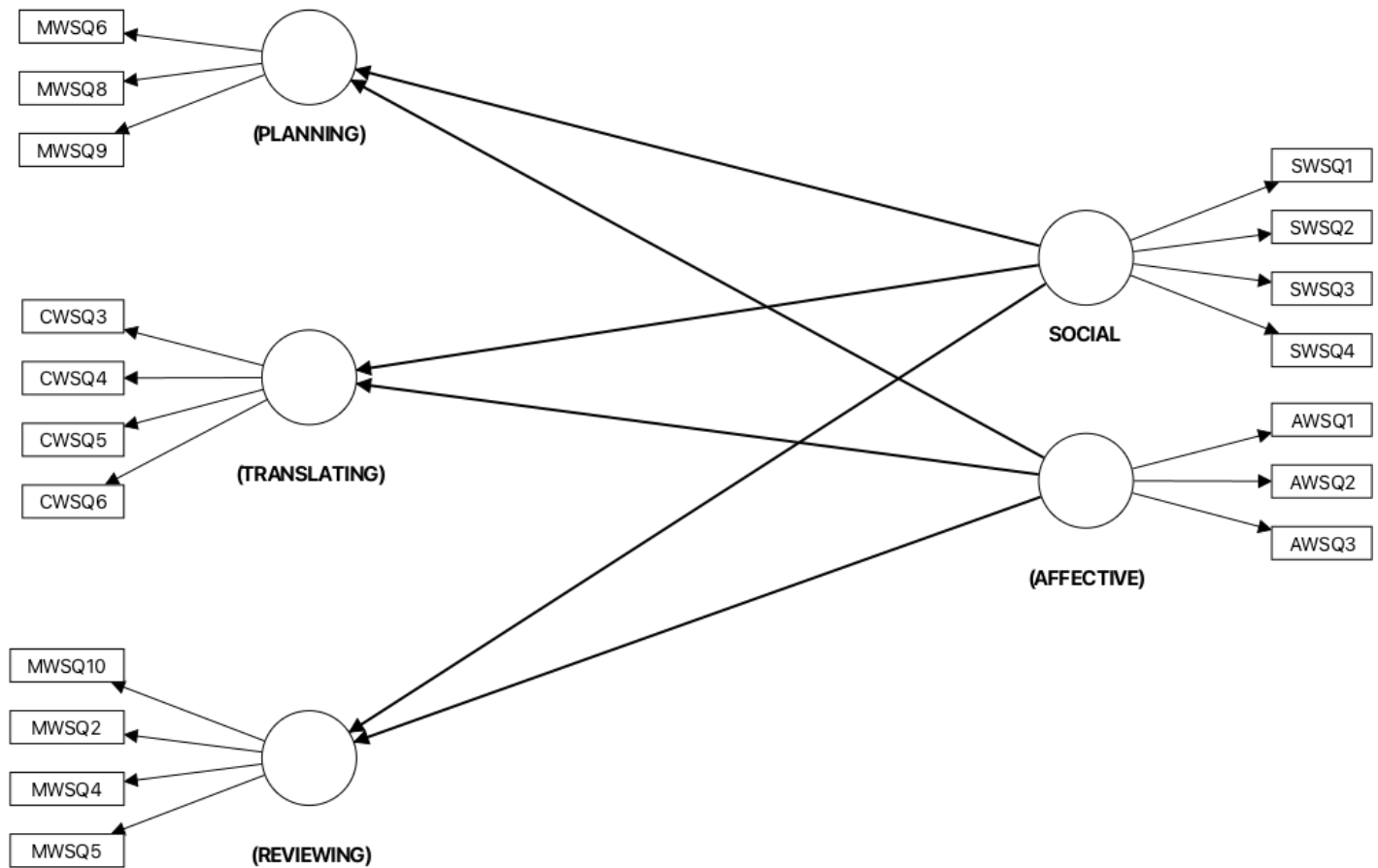
The model formed for this study is that of lower order construct (LOC). The reflective measurement model

was chosen. A reflective measurement model is the formation of a single unobserved latent construct, and this construct influences multiple variables (indicators). Another key feature of LOC is that the indicators are interchangeable. The findings are presented in two stages. The first stage presents the measurement model, and the second stage reveals the structural model as well as answers research questions.

Measurement Model

In SmartPLS 4, the measurement model assesses the reliability and validity of the constructs. This is done by examining the relationships between them and their observable behavior. The measurement model measures the outer model. Figure 3 below shows the measurement model for this study. Further detailed explanation of this model is elaborated in tables below.

Figure 3- Measurement Model



Reliability

According to Ringle & Sarstedt (2015) reliability is assessed by checking indicator reliability and internal consistency reliability. Internal consistency is done using Composite reliability (ρ_c) and Cronbach's Alpha. The cut-off value for Cronbach's Alpha is 0.70 to 0.90. The cut-off values for composite reliability (ρ_c) are 0.70-0.90. For indicator reliability, the factor loadings cut-off values are >0.70 and squared loadings ≥ 0.50 . Finally, the cut-off values for Average Variance Extracted (AVE) ≥ 0.50 .

Table 4 - Results for Reliability- Social Factors

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (ρ_c)	AVERAGE VARIANCE EXTRACTED (AVE)
		0.887	0.921	0.745
SWSQ1	0.855			

SWSQ2	0.833	
SWSQ3	0.892	
SWSQ4	0.872	

Table 4 presents the reliability results for the social factors. Factor loading of all items was found to be between 0.833 and 0.892. The loadings meet the indicator reliability threshold of more than 0.7. Next, the Cronbach's Alpha for social factors is 0.887, the composite reliability is 0.921, and the AVE is 0.745.

Table 5 - Results for Reliability- Affective Factors

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE)
		0.742	0.854	0.664
AWSQ1	0.711			
AWSQ2	0.907			
AWSQ3	0.813			

Table 5 presents the reliability and validity results for the Affective Factors construct, measured using three indicators: AWSQ1, AWSQ2, and AWSQ3. The factor loadings range from 0.711 to 0.907, indicating that all items adequately represent the construct. The Cronbach's alpha value of 0.742 and composite reliability of 0.854 demonstrate acceptable internal consistency. Additionally, the Average Variance Extracted (AVE) value of 0.664 exceeds the recommended threshold of 0.50, confirming satisfactory convergent validity for the construct.

Table 6 - Results for Reliability- Planning

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE)
		0.792	0.878	0.707
MWSQ6	0.785			
MWSQ8	0.902			
MWSQ9	0.831			

Table 6 presents the reliability and validity results for the Planning construct, measured using three indicators: MWSQ6, MWSQ8, and MWSQ9. The factor loadings range from 0.785 to 0.902, indicating strong relationships between the indicators and the construct. The Cronbach's alpha value of 0.792 and composite reliability of 0.878 demonstrate good internal consistency. Additionally, the Average Variance Extracted (AVE) value of 0.707 exceeds the recommended threshold of 0.50, indicating satisfactory convergent validity for the construct.

Table 7 - Results for Reliability- Translating

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE)
		0.855	0.902	0.698
CWSQ3	0.885			
CWSQ4	0.815			
CWSQ5	0.805			
CWSQ6	0.835			

Table 7 presents the reliability and validity results for the Translating construct, measured using four indicators: CWSQ3, CWSQ4, CWSQ5, and CWSQ6. The factor loadings range from 0.805 to 0.885, indicating that all indicators strongly represent the construct. The Cronbach's alpha value of 0.855 and composite reliability of 0.902 demonstrate high internal consistency among the items. Additionally, the Average Variance Extracted (AVE) value of 0.698 exceeds the recommended threshold of 0.50, confirming satisfactory convergent validity.

Table 8 - Results for Reliability- Reviewing

CONSTRUCT/ ITEM	FACTOR LOADING	CRONBACH'S ALPHA	COMPOSITE RELIABILITY (rho_c)	AVERAGE VARIANCE EXTRACTED (AVE)
		0.789	0.861	0.608
MWSQ10	0.829			
MWSQ2	0.711			
MWSQ4	0.754			
MWSQ5	0.828			

Table 8 presents the reliability and validity results for the Reviewing construct, measured using four indicators: MWSQ10, MWSQ2, MWSQ4, and MWSQ5. The factor loadings range from 0.711 to 0.829, indicating that all items adequately represent the construct. The Cronbach's alpha value of 0.789 and composite reliability of 0.861 demonstrate acceptable internal consistency. Additionally, the Average Variance Extracted (AVE) value of 0.608 exceeds the recommended threshold of 0.50, indicating satisfactory convergent validity.

Validity

According to Ramayah et.al. (2018), for validity, the Discriminant validity (HTMT) needs to be <0.85 or <0.90.

Table 9 - Discriminant Validity (HTMT)

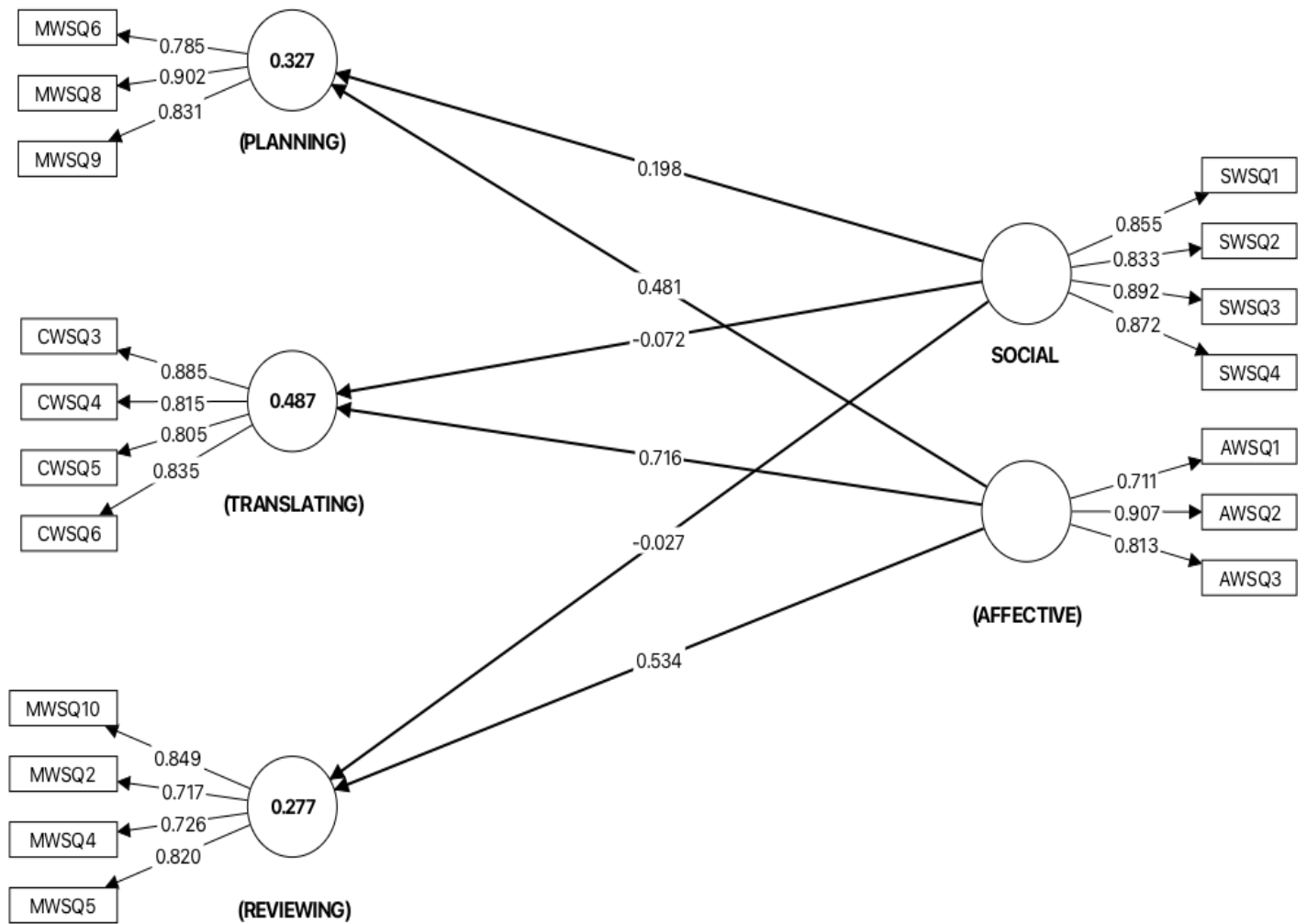
	(AFFECTIVE)	(PLANNING)	(REVIEWING)	(TRANSLATING)
(AFFECTIVE)				
(PLANNING)	0.691			
(REVIEWING)	0.652	0.75		
(TRANSLATING)	0.872	0.636	0.723	
SOCIAL	0.376	0.389	0.161	0.155

Table 9 presents the discriminant validity results using the HTMT criterion among the constructs: affective, planning, reviewing, translating, and social. The HTMT values range from 0.155 to 0.872, all of which are below the recommended threshold of 0.90. This indicates that the constructs are sufficiently distinct from one another and that discriminant validity has been established.

Structural Model

In SmartPLS, the structural model visualizes the hypothesized causal relationships between constructs. The structural model is thus formed after the researcher has established the reliability and validity in the measurement model. For the analysis of the structural model, the researcher runs bootstrapping and examines the collinearity, path coefficients of determination, effect size, PLS predict, and IPMA. In addition to that, the analysis in the structural model allows the researcher to answer research questions 1-6 and hypotheses 1-3). Figure 4 below shows the structural model for this study. Detailed explanation is elaborated in Tables below.

Figure 4- Structural Model



Collinearity

According to Ringle & Sarstedt (2015) the cut-off value for collinearity inner model VIF is ≤ 5.0 .

Table 10 - Collinearity

	Original sample (O)
(AFFECTIVE) -> (PLANNING)	1.099
(AFFECTIVE) -> (REVIEWING)	1.099
(AFFECTIVE) -> (TRANSLATING)	1.099
SOCIAL -> (PLANNING)	1.099
SOCIAL -> (REVIEWING)	1.099
SOCIAL -> (TRANSLATING)	1.099

Table 10 above presents the collinearity results for this study. According to Ringle and Sarstedt (2015), the inner model VIF must be less than or equal to 5.0. All interactions met the threshold for Collinearity.

Coefficients Of Determination (R^2)

According to Ramayah et al., (2018) For coefficients of determination (R^2) 0.2 to 0.7, depending on the field of study. Social Sciences & Economics follows the range above.

Table 11 - R^2

	Original sample (O)
(PLANNING)	0.327
(TRANSLATING)	0.487
(REVIEWING)	0.277

Table 11 shows the results for coefficients of determination (R^2). Results indicate that the R^2 for Planning is 0.327, for translating is .487 and for Reviewing is 0.277.

P-Value

Table 12- Interpretation for p-value

Thresholds	Interpretation	Decision
$p \leq 0.05$	Often considered statistically significant	Reject H_0
$p \leq 0.01$	Indicates very strong evidence against H_0	Reject H_0
$p > 0.05$	Weak or no evidence against H_0	Fai to reject H_0

According to Goodman (1999), a threshold of p-value is the cut-off for determining statistical significance, most commonly set at 0.05. Below is the table that interprets the threshold. Table 12 and 13 show the interpretation for p=value. According to (Goodman, 1999) if the p-value is $p \leq 0.05$, the data is often considered statistically significant, and the null hypothesis is rejected. If it is $p \leq 0.01$, then it indicates very strong evidence to reject the null hypothesis (H_0). However, a $p > 0.05$ is considered weak an there is no evidence to reject the null hypothesis.

Table 13 - Interpretation for p-value

Thresholds	Interpretation	Decision
$p \leq 0.05$	Often considered statistically significant	Reject H_0
$p \leq 0.01$	Indicates very strong evidence against H_0	Reject H_0
$p > 0.05$	Weak or no evidence against H_0	Fai to reject H_0

Table 14 - Path Coefficient for the current study

	T statistics (O/STDEV)	P values	Decision
SOCIAL -> (PLANNING)	2.192	0.028	Reject H_0
SOCIAL -> (TRANSLATING)	1.026	0.305	Accept H_0
SOCIAL -> (REVIEWING)	0.333	0.739	Accept H_0
(AFFECTIVE) -> (PLANNING)	5.416	0	Reject H_0
(AFFECTIVE) -> (REVIEWING)	7.097	0	Reject H_0
(AFFECTIVE) -> (TRANSLATING)	12.823	0	Reject H_0

Table 14 presents the path coefficient results showing the relationships between social and affective factors with the writing process components. The results indicate that social factors significantly influence planning ($T = 2.192$, $p = 0.028$), leading to the rejection of H_0 , but show no significant effect on translating ($T = 1.026$, $p = 0.305$) and reviewing ($T = 0.333$, $p = 0.739$). In contrast, affective factors significantly influence planning, reviewing, and translating, with all p-values equal to 0, resulting in the rejection of H_0 for these relationships.

Effect Size (f^2)

According to (Ramayah et al., 2018) the cutoff values for effect sizes (f^2) are 0.02 (small), 0.15 (medium), and 0.35 (large).

Table 15- Effect Size

	Original sample (O)	Interpretation
SOCIAL -> (PLANNING)	0.053	small
(AFFECTIVE) -> (PLANNING)	0.313	medium
(AFFECTIVE) -> (REVIEWING)	0.359	large
(AFFECTIVE) -> (TRANSLATING)	0.909	large

Table 15 presents the effect size (f^2) results for the relationships between social and affective factors and the writing process components. The findings show that social factors have a small effect on planning ($f^2 = 0.053$). In contrast, affective factors demonstrate stronger effects, with a medium effect on planning ($f^2 = 0.313$) and large effects on reviewing ($f^2 = 0.359$) and translating ($f^2 = 0.909$). These results indicate that affective factors play a more substantial role in influencing the writing process compared to social factors.

PLS Predict (Q^2)

In PLS-SEM, it is stated that $Q^2 \geq 0$ (Ringle et.al., 2024). Table 18 below reveals the PLS Predict (Q^2) for the dependent variable. The analysis reveals the Q^2 for all items in the dependent variable -connectedness.

Table 16 - PLS Predict (Q^2)

	Q^2 predict	RMSE	MAE
(PLANNING)	0.288	0.865	0.658
(TRANSLATING)	0.464	0.75	0.606
(REVIEWING)	0.233	0.898	0.68

Table 16 presents the PLS-Predict (Q^2 predict) results, which assess the predictive relevance of the model. According to Cohen, 1988, a Q^2 value greater than 0 indicates that the model has predictive relevance, while values of 0.02, 0.15, and 0.35 represent small, medium, and large predictive relevance, respectively. The results show that planning ($Q^2 = 0.288$) and reviewing ($Q^2 = 0.233$) demonstrate medium predictive relevance, as their values fall between 0.15 and 0.35. In contrast, translating ($Q^2 = 0.464$) shows large predictive relevance, as the value exceeds 0.35. Additionally, the RMSE and MAE values provide further evidence of acceptable prediction accuracy. Overall, the findings indicate that the model possesses satisfactory predictive capability for the endogenous constructs.

IPMA

IPMA or Importance-Performance Matrix Analysis. According to Ringle and Sarstedt (2016), IPMA is used to evaluate the performance and importance of the chosen constructs or indicators within a model. In the context of this study, individual IPMA analysis was done on each construct and reported in Table 17 & 18

Table 17 - Latent Variables Average Performance (Performance)

	LV performance value, average
SOCIAL	59.696
(AFFECTIVE)	69.022
(PLANNING)	69.817
(TRANSLATING)	75.51

(REVIEWING)	73.405
-------------	--------

Table 18 - Importance

	Total effects
(AFFECTIVE) -> (PLANNING)	0.481
(AFFECTIVE) -> (REVIEWING)	0.534
(AFFECTIVE) -> (TRANSLATING)	0.716
SOCIAL -> (PLANNING)	0.198
SOCIAL -> (REVIEWING)	-0.027
SOCIAL -> (TRANSLATING)	-0.072

According to Hauf (2024) for PLS-SEM IPMA (Importance-Performance Map Analysis), there isn't a single "good score," but rather constructs with high importance (total effects) but low performance scores (rescaled 0-100) are key areas for improvement, indicating high potential for managerial action, while high importance/high performance is good, and low importance/low performance means less priority. Performance scores range 0-100, with higher values showing better attainment, but you interpret them *relative* to their importance.

The Importance-Performance Map Analysis (IPMA) combines the importance (total effects) and performance values of the latent variables to identify key areas for improvement in the model. According to Hauf (2024), constructs with high importance but relatively lower performance indicate areas requiring greater attention. The results show that affective factors have the highest importance, particularly in influencing translating (0.716) and reviewing (0.534), while their performance level is 69.022, suggesting potential for improvement. In contrast, translating shows the highest performance score (75.51), followed by reviewing (73.405) and planning (69.817). Meanwhile, social factors demonstrate lower importance and performance (59.696), indicating lower priority for managerial action. Overall, the findings suggest that improving affective factors may further enhance key writing processes.

CONCLUSION

SUMMARY OF FINDINGS AND DISCUSSIONS

Table 19 - Outcome of Research Hypothesis

Research Question	Research Hypothesis	Outcome
Is there a significant relationship between Social factors and Planning stage?	Ho1: There is no significant relationship between Social factors and Planning stage	Null hypothesis rejected. There is a significant relationship between Social factors and Planning stage
Is there a significant relationship between Social factors and Translating stage?	Ho2: There is no significant relationship between Social factors and Translating stage	Null hypothesis accepted. There is no significant relationship between Social factors and Translating stage
Is there a significant relationship between Social factors and Reviewing stage?	Ho3: There is no significant relationship between social factors and Reviewing stage	Null hypothesis accepted. There is no significant relationship between Social factors and Reviewing stage
Is there a significant relationship between Affective	Ho4: There is no significant relationship between Affective factors	Null hypothesis rejected. There is a significant relationship between

factors and Planning stage?	and Planning stage	Affective factors and Planning stage
Is there a significant relationship between Affective factors and Translating stage?	Ho5: There is no significant relationship between Affective factors and Translating stage	Null hypothesis rejected. There is a significant relationship between Affective factors and Translating stage
Is there a significant relationship between Affective factors and Reviewing stage?	Ho6: There is no significant relationship between Affective factors and Reviewing stage	Null hypothesis rejected. There is a significant relationship between Affective factors and Reviewing stage
Is there a significant effect between social factors and the writing Process?	Ho7: There is no significant effect between social factors and the writing Process	Null hypothesis is rejected for the interaction between social factors and Planning stage (Effect=small) Null hypothesis is accepted for the interactions; Social factors and Translating stage Social Factors and Reviewing stage
Is there a significant effect between Affective factors and the writing Process?	Ho8: There is no significant effect between Affective factors and the writing Process	Null hypothesis is rejected for all interactions. There is significant effect between Affective factors and; Planning stage (effect=medium) Translating stage (effect=large) Reviewing stage (effect=large)

Table 19 above shows the presentation of the outcome of the research questions and hypotheses. The null hypotheses are rejected for 1,4,5,6 & 8. Hypotheses 2 & 3 are accepted. Hypothesis 7 reveals only a significant effect for social factors and the planning stage.

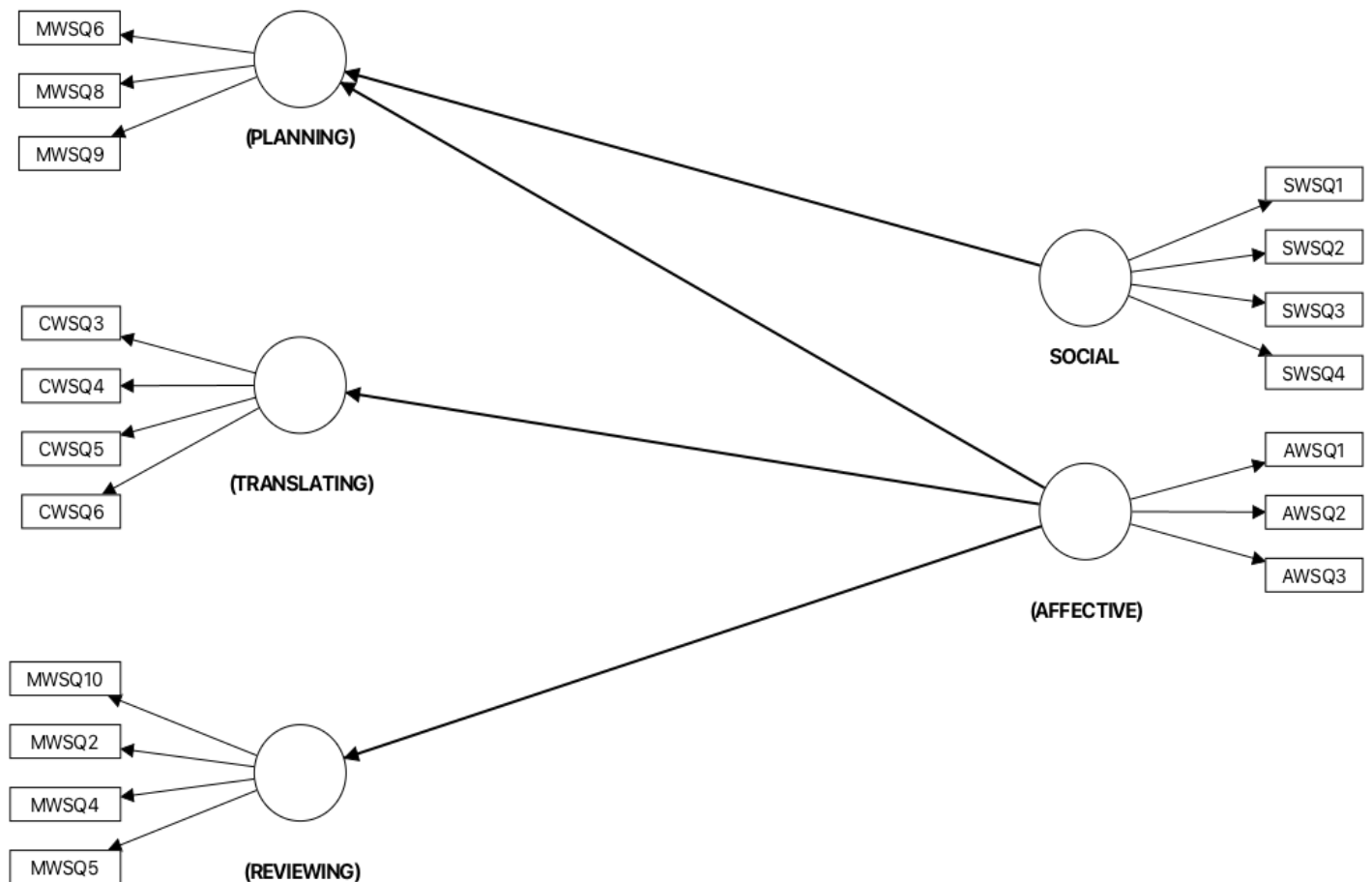
This study aimed to explore the influence of social and affective factors on the writing process, specifically the stages of planning, translating, and reviewing, using PLS-SEM analysis. The findings reveal that affective factors play a stronger and more consistent role in influencing the writing process compared to social factors. The structural model results indicate that affective factors significantly influence all three stages of the writing process such as planning, translating, and reviewing, while social factors only show a significant relationship with the planning stage. These findings align with previous research highlighting the importance of emotional variables such as motivation, confidence, and anxiety in shaping students' engagement in writing activities (Deb, 2018; Hidayah Pratama et al., 2018; Shanmugam et al., 2023). The effect size analysis further confirms that affective factors have a medium effect on planning and large effects on translating and reviewing, indicating that students' emotional readiness and motivation strongly influence their ability to produce and revise written texts. Meanwhile, social factors demonstrate only a small effect on planning and no significant

effect on translating and reviewing. This partially supports earlier studies that highlight the role of social interaction and collaborative environments in shaping writing development (Nisa & Wani, 2024; Stewart, 2021), although the present study suggests that such influence may be limited in certain contexts.

Implications And Suggestions for Future Research

Figure 4 below presents the proposed model for the influence of social and affective factors on writing. Figure 5 reveals the amended model after the findings presented. Social factors give effect on the planning stage. Affective factors give effect to the planning, translating and reviewing stages.

Figure 5 - The Proposed Model



The study also contributes to theoretical understanding by integrating the Cognitive Process Theory of Writing (Flower & Hayes, 1981) with Sociocultural Theory (Vygotsky, 1978). The results reinforce the recursive nature of the writing process involving planning, translating, and reviewing, and demonstrate that these cognitive stages are influenced by learners' emotional and social conditions. In line with sociocultural perspectives, social interaction may assist learners during the early planning stage by enabling idea generation and discussion with peers. However, the later stages of translating and reviewing appear to depend more heavily on internal factors such as motivation, confidence, and emotional regulation. From a practical perspective, these findings suggest that educators should place greater emphasis on supporting students' affective engagement in writing tasks. Creating a supportive classroom environment that promotes confidence, reduces anxiety, and encourages self-motivation can significantly enhance students' writing performance. Teachers may also integrate collaborative activities and peer discussions during the planning stage to maximize the potential benefits of social interaction in writing development.

Despite its contributions, this study has several limitations that open avenues for future research. First, the study focused primarily on social and affective factors, while previous research has shown that cognitive and metacognitive strategies also play an important role in writing development (Andriani et al., 2022; Feng, 2023; Razak, 2025). Future studies may therefore investigate the combined effects of cognitive, social, and affective

variables to provide a more comprehensive understanding of the writing process. Additionally, the sample size and context of the study may limit the generalizability of the findings. Future research could expand the sample to include participants from different educational levels, institutions, or cultural contexts. Researchers may also employ mixed-method approaches to gain deeper insights into how learners experience social interaction and emotional regulation during writing tasks. By extending this line of inquiry, future studies can further refine models explaining the complex interplay of factors that shape writing development.

ACKNOWLEDGEMENT

The authors would like to thank all the participants who took the time to contribute to this study.

Authors' Contribution

Conceptualization and methodology, N.H.C.M. and N.H.R.; software, N.H.R.; validation and formal analysis N.H.R., and M.A.; investigation, N.A. and S.A.S.; resources, R.K.; data curation, N.H.R.; writing original draft preparation, N.H.C.M; N.H.R.; writing review and editing, M.A. and N.Z.; visualization, S.A.S. All authors have read and agreed to the published version of the manuscript.

REFERENCES

1. Andriani, L., Syihabuddin, Sastromiharjo, A., & Anshori, D. (2022). The Role of Writing Process Components and Cognitive Components in Improving the Quality of Narrative. *International Journal of Learning, Teaching and Educational Research*, 21(12), 88–106. <https://doi.org/10.26803/ijlter.21.12.5>
2. Bril, M., Pauw, J., & Lundell, F. F. (2025). Social and Social-Psychological Factors Do Not Predict L2 Writing: The Case of Immigrants in the Netherlands. *International Journal of Applied Linguistics*. <https://doi.org/10.1111/ijal.70006>
3. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd Ed). Hillsdale, NJ.
4. Deb, J. (2018). Affective Factors in Second Language Writing: Is It a Matter of Concern? In *Fall* (Vol. 46, Number 2).
5. Feng, Z. (2023). View of Meta-cognitive Strategies, Automated Writing Evaluation Feedback and English Writing Performance of Chinese EFL College Students. *International Journal of Education and Humanities*, 11(3), 483–486.
6. Flower, L., & Hayes, J. R. (1981). A Cognitive Process Theory of Writing. *College Composition and Communication*, 32, 365–387.
7. Goodman, S. N. (1999). Toward Evidence-Based Medical Statistics. 2: The Bayes factor. *Academia and Clinic*, 130(12).
8. Hair, J. F. Mathews, L. M., Mathews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107–123.
9. Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed, a Silver Bullet". *Journal of Marketing Theory and Practices*, 19(2), 139–152.
10. Hidayah Pratama, N., Laksmi, E. D., Stmik., & Makassar, H. (2018). How Much Do the Affective Factors Contribute to Writing Performance? A Path Analysis Study of Chained Predictors. In *Jurnal Pendidikan Humaniora*. Vol. 6 (1). <http://journal.um.ac.id/index.php/jphpISSN:2338-8110/eISSN:2442-3890>
11. Huang, Y., & Zhang, L. J. (2022). Facilitating L2 writers' metacognitive strategy use in argumentative writing using a process-genre approach. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.1036831>
12. Khezrinejad, M., Rashtchi, M., Seifoori, Z., Candidate, P. D., & Seifoori-Intell, Z. (2023). Research Paper Cognitive and Metacognitive Strategy Instruction and Their Impact on Iranian EFL Learners' Writing Cognitive Processes. <https://doi.org/10.71528/2024.24011096>

13. Kurniasih, K., Mukminatien, N., Sari, R. N., Arianto, M. A., Anggraini, M. P., & Umamah, A. (2022). Affective Factors in Online Writing Performance: Do They Matter? MEXTESOL Journal, 46(2), 2–9.
14. Nisa, S. U., & Wani, N. H. (2024). INVESTIGATING FACTORS INFLUENCING ACADEMIC WRITING SKILLS AMONG FEMALE STUDENTS IN INDIA: A STUDY. Journal of Southwest Jiaotong University, 59(4). <https://doi.org/10.35741/issn.0258-2724.59.4.20>
15. Ramayah, T., Cheak, F., Ting, H., & Memon, M. A. (2018). Partial least Squares Structural Equation Modeling (PLS-SEM) using Smart PLS 3.0: An Updated Guide and practical guide to statistical analysis (2nd ed). Pearson.
16. Raoofi, S., Miri, A., Gharibi, J., & Malaki, B. (2017). Assessing and Validating a Writing Strategy Scale for Undergraduate Students. Journal of Language Teaching and Research, 8(3), 624–633.
17. Razak, A. S. (2025). Implementation of Cognitive Strategies in Teaching Expository Writing to Tenth-Grade Students at SMA IT Granada Samarinda. Journal of Social Research, 4(9), 1986–1992.
18. Ringle, C., & Sarstedt, M. (2015). Gain more insight from your PLS-SEM results: The importance-performance map analysis. Industrial Management & Data Systems, 119(9), 1865–1886.
19. Shanmugam, B., Chew, F. P., & Ng, L. L. (2023). A Study on the Level of Cognitive Factors, Affective Factors and Writing Performance of Students in Paper 4 of The Malaysian University English Test in Malaysia. International Journal of Humanities, Philosophy and Language, 6(23), 13–29. <https://doi.org/10.35631/ijhpl.623002>
20. Stewart, M. K. (2021). Social presence in online writing instruction: Distinguishing between presence, comfort, attitudes, and learning. Computers and Composition, 62. <https://doi.org/10.1016/j.compcom.2021.102669>
21. Vygotsky, L. S. (1978). Mind in Society: The Development of higher psychological processes. Harvard University Press.
22. Ziegenfuss, J. Y., Easterday, C. A., Dinh, J. M., Jaka, M. M., Kottke, T. E., & Canterbury, M. (2021). Impact of demographic survey questions on response rate and measurement: A randomized experiment. Survey Practice, 14(1), 1–11. <https://doi.org/10.29115/sp-2021-0010>

Appendix

Writing Strategy

(this instrument is adapted from (Raoofi et al., 2017) Raoofi et.al, 2017)

SECTION	WRITING STRATEGY	NO OF ITEMS
B	Metacognitive	10
C	Effort Regulation	5
D	Cognitive	6
E	Social	4
F	Affective	3
		26

PART 2-MTEACOGNITIVE (MWS)

NO	Item
1	MWSQ1 I organize my ideas prior to writing.
2	MWSQ 2I revise my writing to make sure that it includes everything I want to discuss in my writing.
3	MWSQ 3I check my spelling.
4	MWSQ 4I check my writing to make sure it is grammatically correct.
5	MWSQ 5I evaluate and re-evaluate the ideas in my essay.
6	MWSQ 6I monitor and evaluate my progress in writing.

7	MWSQ 7I revise and edit an essay two or more times before I hand it in to my teacher.
8	MWSQ8 I go through the planning stages in my writing.
9	MWSQ9 I go through the drafting stages in my writing.
10	MWSQ10 I go through the revising and editing stages in my writing.

PART 3-EFFORT REGULATION (ERS)

NO	Item
1	ERSQ 1I write a lot to develop my writing skills.
2	ERSQ 2I often work hard to do well in my writing even if I don't like English writing tasks.
3	ERSQ 3Even if the writing activities are difficult, I don't give up but try to engage in them.
4	ERSQ 4I concentrate as hard as I can when doing a writing task.
5	ERSQ I spend a lot of time and energy on writing good English assignments.

PART 4-COGNITIVE (CWS)

NO	Item
1	CWSQ1 I use memorized grammatical elements such as singular and plural forms, verb tenses, prefixes and suffixes, etc, in my writing
2	CWSQ 2I put newly memorized vocabulary in my sentences.
3	CWSQ 3In order to generate ideas for my writing, I usually engage myself in brainstorming.
4	CWSQ 4I use different words that have the same meaning.
5	CWSQ 5I use my experiences and knowledge in my writing.
6	CWSQ 6I try to use effective linking words to ensure clear and logical relationship between sentences or paragraphs

PART 5-SOCIAL (SWS)

NO	Item
1	SWSQ1 In order to generate ideas for my writing, I usually discuss the writing topic with a friend or classmate.
2	SWSQ 2After revising and editing my essay thoroughly, I ask a friend or my classmate to read and comment on it.
3	SWSQ 3I try to identify friends or classmates whom I can ask for help in my writing.
4	SWSQ 4When I have trouble writing my essay, I try to do it with my classmates or friends.

PART 6-AFFECTIVE (AWS)

NO	Item
1	AWSQ1I try to write an essay in class with confidence and ease..
2	AWSQ2I try to relax whenever I feel afraid of writing.
3	AWSQ3I encourage myself to write even when I am afraid of making mistakes