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Examining the Influence of Academic Supervisors on Postgraduate Students' Self-Regulated Academic Writing Processes

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Abstract. This study aimed to assess the proposed hypothetical model positing that academic supervisors influence postgraduate students' self-regulated academic writing processes by impacting their mastery goal orientation, value attribution, and self-efficacy related to academic writing. In response to the absence of the measurement tools for evaluating self-regulated academic writing and related variables for postgraduate students, this study was executed in two distinct phases. In Study 1, relevant scales were developed, and validity and reliability assessments were conducted. Study 2 was dedicated to the model testing. Data were collected from postgraduate students enrolled in thesis-based master's and doctoral programs at the Institutes of Education and Social Sciences across various universities in Türkiye. The construct validity of the scales was evaluated using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The study sample comprised 193 participants for Exploratory Factor Analysis (EFA) and a separate group of 252 participants for Confirmatory Factor Analysis (CFA). Model testing was performed using data from 252 participants, employing Structural Equation Modelling. The findings substantiate the proposed hypothetical model. The findings indicate that supervisors exert an influence on the planning, performance, and reflection phases of self-regulated academic writing by affecting students' mastery goal orientation, value attribution, and to a lesser extent self-efficacy, with the most significant effect observed in the reflection phase.

Keywords: Self-regulated academic writing; academic writing mastery goal orientation; academic writing mastery goal environment, value attributed to academic writing; academic writing self-efficacy

1. Introduction

The aim of institutions offering undergraduate and postgraduate education is to disseminate scientific information at the undergraduate level, whereas

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postgraduate education emphasizes the production and dissemination of scientific knowledge through academic publications. Furthermore, postgraduate education endeavours to equip students with academic writing proficiency. Academic writing is defined as a tool for documenting and communicating research processes and results (Monippally & Pawar, 2010), encompassing articles, research papers, term papers, argumentative and informative texts, case reports, scientific articles, critical analyses, and literature reviews (Whitaker, 2009; Turmudi, 2017). It adheres to principles such as stating a clear purpose, logical organization, effective presentation of research with up-to-date and qualified resources, clear and complete explanations to avoid reader fatigue and misunderstandings, adherence to APA Style guidelines for citations and references, and maintaining a clear, concise, and error-free writing style (Whitaker, 2009).

Academic writing can be categorized into four dimensions: process, text, format, and ethics. The process dimension involves preparation, drafting, organizing, editing, publishing, and sharing. This includes planning the content, converting it into written form, and revising the material. The text dimension integrates information from various sources into a coherent logical flow in scientific papers. The format dimension pertains to scientific writing principles, spelling, and punctuation rules. The ethical dimension ensures that the study respects others' intellectual contributions, acknowledges sources, and adheres to ethical principles. Academic writing mandates strict adherence to academic language rules, subject-specific terminology, structural guidelines, objectivity, clarity, persuasiveness, and proper citation practices (e.g. Whitaker, 2009; Tompkins, 2009).

Postgraduate students who are required to produce academic papers should cultivate competencies, such as research, analysis, evaluation, organization of information, critical evaluation of others' arguments, discussion, and precise writing (Whitaker, 2009). Academic writing proficiency is linked to self-regulatory ability. Empirical evidence indicates that self-regulated individuals set learning goals, prioritize task improvement, recognize academic strengths and weaknesses, believe in skill development, and attribute outcomes to controllable factors (Midgley & Urdan, 2001).

1.1 Self-Regulated Academic Writing (SAW)

Self-regulated learning involves thoughts, feelings, and actions aimed at achieving academic goals (Zimmerman, 2000a). It is an active process in which students monitor, regulate, and control their knowledge, emotions, thoughts, and behaviours based on their goals and context, and engage in self-evaluation. While some earlier models view self-regulated learning (SRL) as an individual, cognitive-constructive process, socio-cognitive model (Zimmerman, 1989) highlights the significance of social context or environment as a crucial component of students' SRL. Socio-cognitive factors include personal perceptions, competencies, and environmental conditions, such as teacher support and feedback (Hadwin & Oshige, 2011). Environmental factors have a bidirectional interaction with students' personal and behavioural characteristics. Interaction with context results in the cyclical development of students' SRL (Negretti &

Mežek, 2019). Self-regulation, which includes the cognitive, metacognitive, behavioural, motivational, and emotional/affective aspects of learning (Panadero, 2017), is a crucial determinant of success in academic writing (Golombek et al., 2018). Self-regulated writing processes are individual cognitive activities that are influenced by social context. Initial cognitive traditions view writing as a complex process, including planning, translating, and revising, with writing regulations to monitor cognitive writing behaviour.

Later models recognized social dimension, task environment, motivation, and affective factors as important variables in writing (Hayes, 2012; MacArthur & Graham, 2016). The socio-cognitive perspective (e.g. Zimmerman, 1989) extended these models by emphasizing the emotional, contextual and environmental factors in shaping authors' behaviour and cognitive processes (Sala-Bubare´ & Castello, 2018). Thus, self-regulated academic writing entails the author's management of cognitive, affective, behavioural, and environmental factors during writing, including planning, executing, and evaluating work according to academic discourse.

1.2 SAW and Academic Writing Mastery Goal Orientation (AWMGO)

Goal orientation refers to individuals' beliefs about why they are interested in performing a task or learning (Kaplan et al., 2009). There are two forms of goal orientation: mastery goal orientation and performance goal orientation (Pintrich, 2000; Hulleman et al., 2010; Corwin Senko, et al., 2011; Midgley, et al., 2001). Goal orientation influences cognition, perception, and behaviour (Midgley et al., 2001). It is closely related to self-regulated learning, with mastery goal orientation being more strongly associated with self-regulation (Kaplan et al., 2009). Mastery goal orientation involves focusing on tasks to develop understanding and competence. Students with this orientation aim to develop competency, which leads to learning, comprehension, and task mastery. It is linked to initiating self-regulation, choosing learning strategies, high self-monitoring, cognitive control, persistence despite challenges, feedback interpretation, self-assessment, and adaptation (Pintrich, 2000).

1.3 SAW and Value Attributed to Academic Writing (VAAW)

Values, as guiding principles with varying importance, direct volitional behaviours (Schwartz & Sagie, 2000), guide action and event evaluation (Schwartz, 2007), and indicate whether behaviour is beneficial, appropriate, or desirable (Özkalp & Kirel, 2001). Acquired through lifelong communication and interaction, values shape personality, perspective, and behaviours (Yılmaz, 2009). Rogers (1964) emphasized the role of values in self-actualization, while Sheldon et al. (2002) stated that value-oriented behaviours achieve desired goals. The value attributed to a task is vital for genuine self-regulated learning (SRL) participation (Zimmerman, 2002) and the quality of the academic writing process (Belet Boyacı et al., 2017).

1.4 SAW and Academic Writing Self-efficacy (AWSE)

Self-efficacy, related to the question "Can I do this job?" in self-regulated learning (Pintrich & De Groot, 1990), refers to an individual's confidence in their ability to perform specific actions (Bandura, 1991), and affects task selection, effort,

persistence, thinking styles, reactions, and success (Zimmerman, 2000). Self-efficacy affects the self-regulated skills needed to complete a task successfully (Zimmerman, 2002; Sun & Wang, 2020). High self-efficacy levels are expected in individuals with self-regulation skills (Schunk & Usher, 2011). Writing self-efficacy is an individual's confidence in their writing ability (Müldür & Yalçın, 2019), whereas academic writing self-efficacy (AWSE) is confidence in writing within an academic context.

1.5 SAW and Mastery Goal Environment (AWMGEM) -Academic Supervisor Guidance

Academic writing, which is relatively simple at the undergraduate level and serves primarily as a means of conveying knowledge, has become a complex and challenging endeavour at the graduate level. Postgraduate students are required to produce academic papers such as master's or doctoral thesis. The workload and skills required for these tasks are new to students and imply more diligence, and more personal involvement than undergraduate essays. They are expected to be able to reorganize their existing knowledge by exploring deeper conceptual relationships, formulating arguments, and demonstrating critical thinking in their writing, thus generating new perspectives and revealing their presence in the text – the author's voice – that corresponds to the construction of their identity as writers. This skill does not develop naturally for most students; rather, it often necessitates explicit instruction and feedback on writing. Integrating into academic culture and crafting scientific papers necessitates interaction between supervisors and students (e.g. Castelló et al., 2009; FitzPatrick et al., 2021; Lin et al., 2023; Negretti & Mežek, 2019; Sun et al., 2022; Wagener, 2018).

Moreover, academic writing proficiency is associated with self-regulation skills. Castelló et al. (2009) highlighted the importance of cultivating the following attributes for postgraduate students to succeed in self-regulated academic writing: 1. acquiring knowledge of the most relevant features of academic texts and composition processes; 2. cultivating an awareness of their own writing processes and assessing their competencies and challenges; 3. analysing and adopting strategies essential for composing academic texts; 4. understanding and examining the characteristics of the academic context in which academic texts are produced; 5. recognizing the identity of the academic writer and the emotions associated with its development; 6. fostering positive and constructive attitudes towards academic production and the formative and social relationships it entails. Supervisors also play a vital role in ensuring that postgraduate students successfully acquire these skills (Wagener, 2018).

The roles of supervisors, which include offering guidance and support, facilitating access to resources, providing literature information and feedback, stimulating knowledge acquisition, serving as a role model, teaching academic conventions and citation practices, inducing students into scholarly communication, encouraging original contributions, and acting as co-authors, can significantly enhance postgraduate students' self-regulated academic writing processes. Their guidance aids in navigating the classical sub-processes of planning, textualization, and revision, which are integral to the recursive nature of writing. This guidance also aids postgraduate students in becoming independent thinkers, adhering to

scientific ethics, keeping up with current literature, forging new conceptual links between writing topics and emerging ideas, making strategic decisions throughout the writing process, and cultivating a distinct authorial identity (e.g. Bao et al., 2025; Castello et al., 2009; Wagener, 2018). Consequently, they can equip postgraduate students with essential values and skills for writing academic papers, such as theses and dissertations, thereby advancing their academic career development.

1.5.1 Purpose

Studies on academic writing have highlighted supervisory dialogue in generating interdisciplinary knowledge, generating arguments, and participating in the writing process – planning and conceptualizing a text, redefining its organization over time, reflecting on the text, and opportunities to acculturate (e.g. Björkman, 2017; Castelló et al., 2013; González-Ocampo & Castelló, 2018; Negretti & Mežek, 2019). These studies often emphasize the effects of direct feedback and support provided on written papers. Supervisors may also play a role in enhancing students' self-regulation by influencing their individual characteristics. This study posits that academic supervisor -Academic Writing Mastery Goal Environment (AWMGEN) - exert an influence on postgraduate students' Self-Regulated Academic Writing (SAW) process by impacting their "Academic Writing Mastery Goal Orientation (AWMGO)", "Value Attributed to Academic Writing (VAAW)" and "Academic Writing Self-Efficacy (AWSE).

1.5.2 Study hypothesis and model

The hypotheses of this study were as follows:

Hypothesis 1 (H1). Academic supervisors (AWMGEN) significantly influence PLAN, PERF, and REF phases of SAW.

Hypothesis 2 (H2). Academic supervisors (AWMGEN) significantly influence postgraduate students' AWMGO, VAAW, and AWSE.

Hypothesis 3 (H3). AWMGO, VAAW, and AWSE act as mediators in the relationship between academic supervisors (AWMGEN) and the PLAN, PERF, and REF phases of SAW.

The hypothetical model proposed to explain the manner and degree to which academic advisors influence the self-regulated academic writing process (SAW) through their guidance is presented in Figure 1 (See Figure 1).

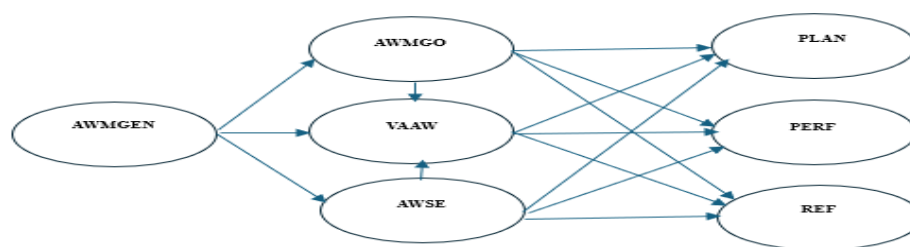


Figure 1: Hypothetical Model

The hypothetical model in Figure 1 arises from the socio-cognitive models of Zimmerman, which illustrate SRL within Bandura's triadic model of social-cognition theory. Bandura (1986) posited that human behaviour emerges from the reciprocal interaction of three influences: personal (cognitive and affective elements), behavioural (actions and reactions), and environmental factors (social and physical elements). In self-regulation, individuals manage these factors to achieve specific goals.

Bandura proposed that individuals initially learn regulation through external social means, such as teacher modelling, and gradually adopt the self-regulation of these functions (Clark & Zimmerman, 2014). The Triadic Analysis Model (Zimmerman, 1989) describes SRL through three primary factors: self, behaviour, and environment. This triadic self-regulation loop uses strategies and is sustained based on enactive feedback.

The Cyclic Stages Model (Zimmerman, 2000b) illustrates the interplay between metacognitive and motivational processes at the individual level in three stages: forethought, performance, and reflection. This approach assumes that environmental factors interact bidirectionally with students' personal and behavioural characteristics. Interaction with context leads to the cyclical development of students' SRL. The Multi-Level Self-Regulation Model (Zimmerman & Kitsantas, 2005) outlines four SRL stages.

The initial stages emphasize social modelling and support, where students observe and imitate instructors to acquire skills through guidance and feedback. The latter stages focus on individual adaptation, where learners integrate skills through systematic practice and achieve self-regulated proficiency, allowing them to adapt strategies independently (Panadero et al., 2017; Zimmerman, 2013). In this sense, supervisors contribute significantly to students' SAW process.

2.Method

This section provides details on the study design, procedures, and participants.

2.1 Research Design

At the postgraduate level, academic writing involves the writer's voice and integration of new knowledge, setting it apart from undergraduate writing. Research on self-regulated academic writing has predominantly focused on the undergraduate level (e.g., Mitchell et al., 2019), utilizing qualitative methodologies (e.g., Negretti & Mežek, 2019), or examining solely within self-efficacy frameworks (e.g., Golombek, 2019). As a result, the absence of comprehensive measurement tools for postgraduate self-regulated academic writing and related variables highlights the need to develop such tools. To address this gap, two distinct studies were conducted. Study 1 focused on developing scales and conducting validity and reliability assessments, whereas Study 2 was dedicated to testing the hypothetical model.

2.1.1 Study 1

Development of the Scales

The process involved reviewing the literature, specifying behaviours for observation, and generating item pools for each scale (final forms in Appendix 1). The item pools created were: 47 items for "Self-Regulated Academic Writing Scale (SAW)", 16 items for "Academic Writing Mastery Goal Orientation Scale (AWMGO)", 23 items for "Academic Writing Mastery Goal Environment Scale (AWMGEN)", 15 items for "Value Attributed to Academic Writing Scale (VAAW)" and 10 items for "Academic Writing Self-Efficacy Scale (AWSE)".

The scales used a five-point Likert scale: Strongly Disagree (1), Disagree (2), Undecided (3), Agree (4), Strongly Agree (5). Following established procedures (e.g. Beydoğan & Beydoğan, 2024; Rokeman, 2024; Yeşilyurt & Çapraz, 2018), three language education experts with self-regulated learning experience evaluated the scales using content validity index (CVI) and qualitative feedback. Experts rated items for clarity and relevance from 1 to 3: "not relevant / not clear, relevant but need minor revision, highly relevant and clear". Items with inter-rater agreement below 0.80 were excluded from the scales. Incorporating expert feedback enabled necessary modifications to the items, ensuring clear presentation and face validity.

The scales were administered to 40 postgraduate students enrolled in master's and doctoral programs at educational and social sciences institutes. To ensure the reliability of the scales, their internal consistency was assessed using Cronbach's alpha coefficient, with the resulting coefficients ranging from .78 to .87. Additionally, to assess test-retest reliability, the scales were administered to the same cohort after three weeks, and response consistency was compared using Spearman's correlation analysis. The test-retest reliability coefficients were found to range from .88 and .94. The internal consistency and test-retest reliability coefficients demonstrated that the scales were reliable. Lastly, Exploratory factor analysis (EFA) provided evidence for construct validity and factor structure, while confirmatory factor analysis (CFA) verified the resulting structure (Çokluk et al., 2025).

2.1.2 Study 2

Model testing

Structural Equation Modelling (SEM) analysis was employed to test the hypothetical model, elucidating the relationships between variables and their multidirectional interdependencies (Hoe, 2008). Prior to SEM analysis, it was ensured that the assumptions regarding normal distribution, covariance, linearity, and multicollinearity were fulfilled. The SEM analysis employed the Maximum Likelihood method using LISREL 8.8 (Jöreskog & Sörbom, 1993).

2.2 Participants

The participants in this study were postgraduate students pursuing thesis-based master's and doctoral degrees at the institutes of education and social sciences in Türkiye, chosen through purposive sampling. Data were collected on a voluntary basis with the approval of the [Anonymous] University Presidency Social and Human Sciences Scientific Research and Publication Ethics Committee. For EFA, scales were administered to 193 participants (68 males, 125 females).

Of these, 114 were PhD students (44 in social sciences, 70 in educational sciences), and 79 were MA students (31 in social sciences, 48 in educational sciences). For CFA, the scales were administered to a sample of 252 participants (102 males, 150 females), who were enrolled at universities distinct from those where data for the Exploratory Factor Analysis (EFA) were collected. Of these, 139 were PhD students (62 in social sciences, 77 in educational sciences), and 113 were MA students (54 in social sciences, 59 in educational sciences). Model testing utilized data from 252 participants.

3. Results

3.1 Results of Study 1

The findings, including the EFA and CFA and the reliability results of the scales, are presented in Table 1-3.

3.1.1 EFA Findings

EFA was conducted after confirming that the data satisfied the prerequisites for factor analysis, as evidenced by exceeding the Kaiser-Meyer-Olkin (KMO) measurement threshold of 0.80 (Çokluk et al., 2025). EFA was performed utilizing the Direct Oblimin method, which is an oblique rotation technique. The criteria for determining the retention of items within the scales included eigenvalues ≥ 1 , factor loadings $\geq .32$, and a minimum difference of .10 between overlapping items (Çokluk et al., 2025). Table 1 presents the KMO values and EFA results.

Table 1: EFA Findings of the Scales

Scales	KMO	Items	Factor loads	Total Variance
SAW (Total)	.908	30		55.129 %
Planning		7	.42 to .84	5.251%
Performance		15	.33 to .87	43.702%
Reflection		8	.40 to .78	6.175%
AWMGO	.904	8	.56 to .87	61.681%
AWMGEN	.943	13	.76 to .86	67.329%
VAAW	.907	7	.70 to .88	68.411%
AWSE	.829	6	.69 to .85	59.396%

As presented in Table 1, SAW comprises 30 items with a three-factor structure: planning (PLAN), performance (PERF), and reflection (REF). The AWMGO, AWMGEN, VAAW, and AWSE have single-factor structures with 8, 13, 7, and 6 items, respectively (Detailed EFA results are provided in Appendices 2 and 3).

3.1.2 CFA Findings

CFA was performed using the LISREL 8.8. The results were assessed using goodness-of-fit, including χ^2/df , NFI, NNFI, CFI, SRMR, and RMSEA, along with the respective cut-off points for these indices. Table 2 presents the fit indices for the scales, along with the cut-off points used in the CFA to determine good or absolute fit.

Table 2: CFA Findings of the Scales

	χ^2	df	χ^2/df	RMSEA	SRMR	NNFI	NFI	CFI	p
SAW	961.91	398	2.4	.08	.06	.96	.94	.97	.00
AWMGEN	131.27	57	2.3	.08	.03	.98	.98	.99	.00
AWMGO	39.71	18	2.2	.07	.03	.98	.98	.99	.00
VAAW	22.91	11	2.0	.07	.02	.99	.99	.99	.00
AWSE	15.27	7	2.1	.07	.03	.97	.98	.99	.00

Cut-off points for good or absolute fit indices: $\chi^2/df \leq 3$ = Absolute fit (Kline 2005) / $SRMR \leq .05$ Absolute fit (Brown, 2006) / $SRMR \leq .08$ Good fit (Hu & Bentler, 1999) / $RMSEA \leq .08$ Good fit (Jöreskog & Sörbom, 1993) / $NFI/NNFI \geq .90$ Good fit (Tabacknick & Fidell, 2013) / $NFI/NNFI \geq .95$ Absolute fit (Hu & Bentler, 1999) / $CFI \geq .95$ Absolute fit (Hu & Bentler, 1999)

Table 2 demonstrates that the scales met the established criteria for good or absolute fit indices.

3.2 Reliability Findings

The Cronbach's alpha and McDonald's omega coefficients were used to evaluate the reliability of the scale. Table 3 presents the reliability analysis results for the scales.

Table 3: Reliability findings of the scales

Scales	Cronbach Alfa	Omega	CR
SAW Total	.99	.97	.95
PLAN	.89	.87	.85
PERF	.94	.94	.92
REF	.88	.89	.84
AWMGO	.90	.94	.92
AWMGEN	.95	.97	.96
VAAW	.91	.95	.93
AWSE	.85	.91	.89

As demonstrated by Cronbach's alpha coefficients, McDonald's Omega coefficients, and composite reliability values presented in Table 2, the scales yielded reliable results, with values exceeding 0.70.

3.2.1 Study 2: Model testing

The correlation coefficients between the variables are presented in Table 4.

Table 4: Descriptive Statistics and Correlations Between the Variables

Variables	\bar{x}	Sd	1	2	3	4	5	6
PLAN (1)	31.051	3.193						
PERF (2)	67.587	6.141	.675**					
REF (3)	34.599	3.855	.584**	.643**				
AWMGO (4)	36.353	3.575	.380**	.482**	.545**			
VAAW (5)	29.623	4.115	.509**	.477**	.619**	.476**		
AWSE (6)	23.829	3.292	.337**	.360**	.397**	.265**	.320**	
AWMGEN (7)	55.992	8.681	.409**	.427**	.287**	.290**	.313**	.172**

** . Correlation is significant at the 0.01 level (2-tailed).

According to the findings presented in Table 4, no multicollinearity was observed among the variables ($r_{xy} < .85$; Çokluk et al., 2025; Raykov & Marcoulides, 2012).

3.3 Results of Study 2

The findings, including pathways, structural equations, and fit indices, related to hypotheses (H1) and (H2), which examine whether academic supervisors exert direct effects on the planning, performance, and reflection phases of self-regulated academic writing, as well as on AWMGO, VAAW, and AWSE, are presented in Table 5.

Table 5: Paths, Structural Equations and Fit Indices for (H1) and (H2)

Paths	Structural equations		p	R ²
	β	t		
AWMGEN→ PLAN	.48	6.56	PLAN= .48 *AWMGEN	.00 .23
AWMGEN→ PERF	.53	6.73	PERF= .53 *AWMGEN	.00 .28
AWMGEN→ REF	.42	5.47	REF= .42 *AWMGEN	.00 .18
Fit Indices: $\chi^2/df= 2.2$; RMSEA= .07; SRMR=.05; NFI=.94; NNFI=.97; CFI= .97				
AWMGEN→ AWMGO	.39	5.85	AWMGO= .39 *AWMGEN	.00 .16
AWMGEN→ VAAW	.43	6.38	VAAW= .43 *AWMGEN	.00 .19
AWMGEN→ AWSE	.26	3.61	AWSE= .26 *AWMGEN	.00 .07
Fit Indices: $\chi^2/df = 2.3$; RMSEA= .07; SRMR=.08; NFI=.94; NNFI=.96; CFI= .96				
Cut-off points for good or absolute fit indices: $\chi^2/df \leq 3$ = Absolute fit (Kline 2005) / SRMR\leq .05 Absolute fit (Brown, 2006)/ SRMR\leq .08 Good fit (Hu & Bentler, 1999)/ RMSEA\leq .08 Good fit (Jöreskog & Sörbom, 1993)/ NFI/NNFI\geq .90 Good fit (Tabacknick & Fidell, 2013) /NFI/NNFI\geq .95 Absolute fit (Hu & Bentler, 1999) /CFI\geq .95 Absolute fit (Hu & Bentler, 1999)				

Considering the fit indices in structural equation modelling, it can be concluded that the models presented in Table 5 generally exhibit good-to-absolute fit values. Moreover, as evidenced by the coefficients of determination in Table 5, academic supervisors exerted a direct influence on all phases of SAW: PLAN ($R^2 = .23$), PERF ($R^2 = .28$), and REF ($R^2 = .18$). They also exert a direct influence on AWMGO ($R^2 = .16$), VAAW ($R^2 = .19$), and AWSE ($R^2 = .07$). The findings pertaining to (H1) and (H2) hypotheses indicate that academic supervisors exert a direct influence on the planning, performance, and reflection stages of self-regulated academic

writing, as well as on AWMGO, VAAW, and AWSE. Thus, hypotheses (H1) and (H2) have been substantiated (Refer to Appendices 5 and 6).

Figure 2 illustrates the results of the Structural Equation Modelling (SEM) applied to the hypothetical model (*Hypothesis 3 (H3)*), which examines whether AWMGO, VAAW, and AWSE function as mediators in the relationship between Academic Supervisors (AWMGEN) and the PLAN, PERF, and REF phases of SAW.

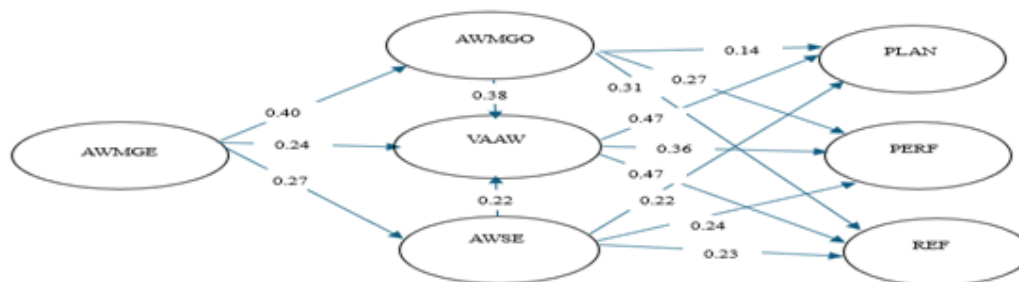


Figure 2: Structural Equation Model

The structural and reduced form equations for the hypothetical model are presented in Table 6 (Refer to Appendix 7).

Table 6: Paths, Structural Equations and Reduced Form Equations for Hypothetical Model

Paths	Structural equations		p	R ²
	β	t		
AWMGEN→AWMGO	.40	5.88	AWMGO = 0.40*AWMGEN	.00 .16
AWMGEN→AWSE	.27	3.77	AWSE = 0.27*AWMGEN	.00 .07
AWMGEN→VAAW	.24	3.69	VAAW = 0.38*AWMGO +	.00 .37
AWMGO→VAAW	.38	5.52	0.22*AWSE + 0.24*AWMGEN	
AWSE→VAAW	.22	3.40	Reduced Form Equation VAAW = 0.45*AWMGEN	.00 .20
AWMGO →PLAN	.14	2.05	PLAN = 0.14*AWMGO +	.00 .42
VAAW→PLAN	.47	5.79	0.47*VAAW + 0.22*AWSE	
AWSE→PLAN	.22	3.25	Reduced Form Equation PLAN = 0.33*AWMGEN	.00 .11
AWMGO→PERF	.27	3.93	PERF = 0.27*AWMGO +	.00 .43
VAAW→PERF	.36	4.61	0.36*VAAW + 0.24*AWSE	
AWSE →PERF	.24	3.61	Reduced Form Equation PERF = 0.34*AWMGEN	.00 .11
AWMGO →REF	.31	4.65	REF = 0.31*AWMGO +	.00 .59
VAAW→REF	.47	5.92	0.47*VAAW + 0.23*AWSE	
AWSE →REF	.23	3.67	Reduced Form Equation REF = 0.39*AWMGEN	.00 .16

Fit Indices: $\chi^2/df = 2.0$; RMSEA= .06; SRMR=.08; NFI=.93; NNFI=.96; CFI= .96

According to the SEM findings, ($\chi^2/df < 3$, RMSEA=.08, SRMR = .08, NNFI = .96, NFI = .93, and CFI = .96), the model generally has a good fit (Çokluk et al., 2025; Hu & Bentler, 1999; Jöreskog & Sörbom, 1993). According to Table 6, AWMGO, VAAW, and AWSE explain 42% of the variance in the planning phase (PLAN), 43 % in the performance phase (PERF) and 59 % in the reflection phase (REF). 11 %

of the variance in the (PLAN) and (PERF) phases and 16% of the variance in the (REF) phase can be attributed to the indirect effect of the academic advisor (AWMGEN).

The beta coefficients indicate that the Value Attributed to Academic Writing (VAAW) was the most significant factor influencing the PLAN, PERF, and REF phases. Academic Writing Self-Efficacy (AWSE) is the second most influential variable for PLAN, followed by Academic Writing Mastery Goal Orientation (AWMGO). For PERF and REF, AWMGO was second, followed by AWSE. The Academic Writing Mastery Goal Environment (AWMGEN) of supervisors indirectly impacts PLAN, PERF, and REF by affecting AWMGO, VAAW, and AWSE, with the most significant indirect effect in the REF phase. Academic supervisors exert an indirect influence on the planning, performance, and reflection phases of SAW through their influence on academic writing mastery goal orientation, value attribution, and, to a lesser extent, academic writing self-efficacy. The structural equation modelling results validated the hypothetical model.

4. Discussion

The research findings indicate that the planning (PLAN), performance (PERF), and reflection (REF) phases of Self-Regulated Academic Writing (SAW) are directly influenced by Academic Writing Mastery Goal Orientation (AWMGO), Value Attribution to Academic Writing (VAAW), and Academic Writing Self-Efficacy (AWSE). VAAW was the most influential variable across all phases. Academic supervisors indirectly affect the planning (PLAN), performance (PERF), and reflection (REF) phases by influencing AWMGO and VAAW, and to a lesser extent, AWSE, with the greatest impact on the reflection phase.

In other words, AWMGO, VAAW, and AWSE function as partial mediators in the relationship between Academic Supervisors (AWMGEN) and the PLAN, PERF, and REF phases of SAW. Self-regulation in writing encompasses planning, performing, and reflecting (Zimmerman, 2013), requiring choices on content, timing, purpose, and method, as well as monitoring and adjusting one's feelings, thoughts, and actions during the writing process. Students often find academic writing challenging because it involves adapting to unique linguistic norms, which can feel like learning a new language (Goodson, 2016). To master self-regulated writing, students need to grasp these principles and hone their skills through structured activities and guided learning (Lee & Murray, 2013), underlining the pivotal role of academic supervisors in skill development.

The value that an individual set on a task is critical for real and successful engagement in self-regulated learning (Zimmerman, 2002). Values indicate whether their behaviour is good, correct, and desired and guide individuals' decisions (Özkalp & Kirel, 2001). This study found that Value Attribution to Academic Writing (VAAW) significantly affects all phases of SAW, with academic supervisors playing a key role in shaping postgraduate students' VAAW. This finding suggests that supervisory guidance significantly influences self-regulated academic writing by affecting the value attributions that directly guide voluntary

behaviours (Schwartz & Sagie, 2000), informing action evaluations (Schwartz, 2007), and determining the desirability of academic writing (Özkalp & Kirel, 2001). This aligns with previous research that has highlighted the importance of task value perceptions in self-regulation (Neuville et al., 2007). VAAW is directly influenced by Academic Writing Mastery Goal Orientation (AWMGO) and Academic Writing Self-Efficacy (AWSE). Empirical evidence links perceived task value with achievement goals (Liem et al., 2008) and shows a positive correlation between task value and self-efficacy (Lavasani et al., 2010). Thus, task values significantly enhance self-regulated academic writing, even for students with low self-efficacy in challenging tasks like academic writing.

Research has indicated that self-efficacy positively influences self-regulatory processes and outcomes (Bandura, 1991). High self-efficacy students achieve better academic results than those with low self-efficacy (Bandura & Schunk, 1981). However, higher self-efficacy can sometimes correlate with lower performance, or performance may improve when self-belief is slightly below task requirements (Schmidt & DeShon, 2010). Academic Writing Self-Efficacy (AWSE) was the second most significant variable in the PLAN phase and the least effective in the PERF and REF phases, possibly because of perceived task difficulty (Eccles & Wigfield, 2020).

Furthermore, academic supervisors influenced postgraduate students' AWSE to a lesser extent. This phenomenon can be attributed to postgraduate students' perceptions of their writing ability. Individuals may maintain an entity or incremental conception of ability. Students who adhere to entity theory posit that talent is relatively stable and unchanged over time, whereas those who subscribe to incremental theory postulate that talent can be developed through effort and learning. With few exceptions, students who adopt an incremental approach are more likely to establish learning goals that enhance their self-efficacy and motivate them to engage in self-regulation. Students who espouse entity theory are less inclined to pursue learning objectives due to their belief that learning will not augment their talent (Dweck, 1999). Consequently, self-efficacy may exhibit its most pronounced effects on self-regulated academic writing in students who adopt the theory of incremental conceptions of ability (Schunk & Zimmerman, 2007).

Mastery goal orientation, which refers to an individual's belief regarding their motivation to engage in a task or learning (Kaplan et al., 2009), initiates self-regulation, selection of learning strategies, high self-monitoring, and cognitive control during participation, persistence despite difficulties, and interpretation of feedback for progress, self-assessment, and adaptation (Pintrich, 2000). The findings indicate that Academic Writing Mastery Goal Orientation (AWMGO) directly influences all phases of SAW and indirectly affects SAW by impacting VAAW. This aligns with studies showing that students with a mastery goal orientation focus on developing competence in academic tasks, and that perceived task value is related to their achievement goals (e.g., Liem et al., 2008). This finding suggests that academic supervisors play a role in all phases of SAW by influencing AWMGO, which pertains to students' beliefs regarding their motivation to engage

in academic writing. Consequently, this influence indirectly affects value attribution. In this context, the significance of the value attributed to the task becomes evident. This study emphasizes that Value Attribution to Academic Writing (VAAW) is crucial for SAW, aligning with research indicating that task value is more closely associated with academic success and engagement than self-efficacy, and that value structures, including achievement value (importance), intrinsic value (interest), utility value (usefulness), and cost, are vital in motivating and sustaining student action (Bong, 2001; Seo & Taherbhai, 2009).

Self-regulation is conceptualized as the voluntary management of attentional, emotional, and behavioural impulses to achieve personally valued goals and standards (Duckworth & Carlson, 2015). Thus, even if students lack self-efficacy in difficult tasks like academic writing, task value significantly enhances their self-regulated writing. While self-efficacy is "the ability to perform," valuing is "attributing importance and desiring to perform." Postgraduate students' self-regulated writing depends more on the importance and interest they place on writing than on their perceived ability, a phenomenon that is also shaped by academic supervisor guidance.

The study's findings indicate that academic supervisor exert a substantial influence on both planning and performance, with their most pronounced impact occurring during the reflection phase. This finding is consistent with studies that emphasize the importance of supervisors' guidance on planning strategies (content creation, library resource utilization, or deciding to forgo planning -), and monitoring and reflection processes (e.g. Hammann, 2005; Pintrich, 2000). The finding that supervisors have the greatest impact on students' self-reflection is particularly significant. Encouraging self-reflection by supervisors can prompt students to engage in forethought about subsequent writing tasks (e.g. Negretti & Mežek, 2019) and thereby foster self-regulatory skills for higher-quality writing. Engaging in self-reflection—by examining one's own compositional processes and pinpointing areas for improvement—is essential for regulating writing and crafting quality texts that convey a unique voice, thereby developing author identity (Castello et al., 2009; Castelló et al., 2013; González-Ocampo & Castelló, 2018; Zimmerman, 2000).

5. Conclusion

In this study, scales for self-regulated academic writing, academic writing mastery learning goals, academic writing value attribution, and academic writing self-efficacy were developed for postgraduate students. The findings indicate that supervisors significantly influenced the self-regulated academic writing process of these students, which is consistent with previous research. However, this study uniquely reveals that supervision affects students' self-regulated academic writing through its influence on academic writing mastery goal orientation and value attribution and, to a lesser extent, on their self-efficacy, confirming the proposed hypothesis. As writing instructors and innovators, supervisors can influence students' beliefs about writing and, thereby, self-regulated writing processes (e.g. Hammann, 2005; Pare, 2011; Negretti & Mežek, 2019). Meyer et al. (2000)'s concept of teachers evolving from receivers to constructors of knowledge

applies to postgraduate students, who are expected to acquire and construct academic knowledge through academic writing, with supervisors playing a crucial role in this process. Considering the items of the AWMGEN scale, it can be asserted that the guidance supervisors offer, the opportunities they create for academic writing, the emphasis they place on its significance, their critical evaluations of both published and student work in terms of academic discourse, their feedback on the strengths and weaknesses of students' texts, and their encouragement for students to engage in academic writing, even when challenging, can shape their goal orientations and value attributions regarding academic writing. These factors prompt students to reflect on their writing, aiding them in developing a perspective on the quality of their academic writing, thereby significantly influencing the formation of their authorial identity.

6. Limitations and future directions

While this study has yielded a significant finding, previously unaddressed in the literature, that supervising enhances self-regulated academic writing by influencing the individual characteristics of graduate students, as with many other studies, this study has some limitations. It is particularly constrained by its reliance on self-reported data and cross-sectional design, which constrains the ability to establish causal relationships between variables. Moreover, the findings are confined to supervisory guidance on academic writing for postgraduate students enrolled in educational and social science institutes in Türkiye. This guidance occurs in theoretical and practical courses, such as specialization, seminar, and thesis supervision, which are conducted regularly on a weekly basis.

In international contexts where supervisory roles are similarly defined, and the interaction between students and supervisors mirrors this approach, comparable outcomes can be achieved. Nonetheless, the nature of supervisory tasks and intensity of supervisor-student interactions may vary across countries, potentially resulting in different outcomes. In addition to the limited number of students pursuing postgraduate education, the fact that these students constitute hard-to-reach groups due to their dispersed nature across various classes and that voluntary participation is essential constituted has presented a limitation in terms of sample size. This constraint was particularly evident as it necessitated accessing separate sample groups for the two studies.

To achieve generalizable results, it is necessary to include a larger sample of students and to conduct separate measurements at the international level. While the items were initially designed to differentiate the dimensions of self-regulated academic writing, those for peer assistance and environmental regulation (study space and time) proved ineffective within this cohort and were excluded during exploratory factor analysis. These items can be incorporated into alternative academic contexts. The model can be further refined by incorporating academic writing achievements into the self-regulated academic writing model.

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APPENDIX 1: SCALES

SELF-REGULATED ACADEMIC WRITING		1	2	3	4	5
Before writing an academic paper (thesis, article, paper, research paper, etc.),						
1	I do in-depth research on what I will write					
2	I set my writing purpose					
3	I determine the scope and limitations of my writing.					
4	I plan how to present the content.					
5	I think about what I need to do during the writing process.					
6	Prior to commencing the writing process, I prepare a preliminary draft.					
7	I think for a while about how I will express what I am going to write.					
When writing an academic paper (thesis, article, paper, research paper, etc.),						
8	I think about what more I should write in connection with the subject I will write about.					
9	When I write, I consider the logical progression and interconnection of topics or paragraphs.					
10	As a requirement of academic writing, I take care to comply with ethical rules (plagiarism, etc.).					
11	As a requirement of academic writing, I take care to use the forms of citation (such as quoting and preparing a bibliography) correctly.					
12	I take care to write the following academic discourse.					
13	As a requirement of academic writing, I take care to use the ways of grounding thought (such as definition, explanation, using graphic organizers, making references, discussion) correctly.					
14	I take care to express the information I have acquired in a clear, simple, and consistent manner as possible.					
15	As a requirement of academic writing, I take care to follow up-to-date resources on the subject I write.					
16	After I finish writing a chapter, I read it again to check what I wrote.					
17	I immediately add every work I use to the bibliography.					
18	I check whether what I write is suitable for academic discourse.					
19	I check whether what I wrote is related to what I wrote in the text.					

20	I check the correctness of my writing in terms of spelling and grammar.					
21	I check whether what I have written is under appropriate subtitles (introduction, method, findings, discussion, conclusion, etc.).					
22	I check the consistency between the references I use in my article and the bibliography.					
23	I continue to write even if it is difficult.					
24	I remind myself that if I use the right strategies, I will be successful.					
25	I remind myself that I have to do this task.					
26	When I don't know how to write, I ask my supervisor for help.					
Upon completing academic writing task;						
27	I think about the quality of my writing.					
28	I think about the contribution of my writings to the literature.					
29	I think about my feelings about my writing.					
30	When I feel that I have completed the academic writing task, I would like to share it in an academic environment (journal, congress, etc.).					

	ACADEMIC WRITING MASTERY GOAL ORIENTATION	1	2	3	4	5
	While doing postgraduate writing assignments (research assignment, seminar, paper, etc.);					
1	One of my goals is to improve my knowledge and skills in academic writing.					
2	One of my goals is to learn as much as possible about academic writing.					
3	It is important for me to develop my knowledge and skills in academic writing.					
4	It is important to me to understand the requirements of academic writing.					
5	One of my goals is to identify the aspects of academic writing that I need to improve.					
6	One of my goals is not to repeat the academic writing mistakes I've made before.					
7	One of my goals is to achieve a better level in academic writing.					
8	One of my goals is to write publishable manuscripts.					

	ACADEMIC WRITING MASTERY GOAL ENVIRONMENT (Academic Supervisor Guidance)	1	2	3	4	5
	My academic supervisor;					
1	states that academic writing is a way of discovering new ideas related to the subject area.					
2	states that academic writing is a processed job.					
3	gives enough time to explore, understand and translate new ideas related to the subject area into an academic paper.					
4	encourages us to write academic papers on different subjects.					
5	informs about the features that an academic paper should have.					
6	emphasizes the importance of the use of academic language in terms of the quality of the writing.					
7	underscores the importance of subjecting articles to a comprehensive process that includes planning, drafting, reviewing, and editing to ensure the production of high-quality scholarly work.					
8	emphasizes the importance of writing academic papers with a publishable quality.					
9	states that it is possible to write a qualified academic paper even if the subject area is very comprehensive and challenging.					
10	shows well-written academic papers as examples.					
11	gives feedback on the relevance of the articles we have written to academic discourse.					
12	underlines that one of the most important features of academic writing is writing following ethical rules.					
13	notes that we should consider the feedback on the papers we have written before.					

	VALUE ATTRIBUTION TO ACADEMIC WRITING	1	2	3	4	5
	Academic writing tasks (research paper, article, proceeding, etc.)					
1	I find academic writing tasks valuable as they contribute to the enhancement of my academic writing proficiency					
2	I enjoy doing academic writing tasks, even if they are challenging.					
3	I do academic writing tasks with interest as they allow me to learn new things.					
4	I enjoy doing academic writing tasks even if I make many mistakes.					
5	I enjoy doing academic writing tasks as I perceive them as valuable learning experiences.					
6	I enjoy doing academic writing tasks because I think they have a positive impact on my academic career.					

7	Because I care about academic writing tasks, I think that I will write even when I am not writing (eg, at night, while doing other work).					
---	---	--	--	--	--	--

	ACADEMIC WRITING SELF-EFFICACY	1	2	3	4	5
1	I can write an academic paper (article, proceeding etc.) without any help.					
2	I can write all parts (introduction, method, findings, discussion and conclusion, references) that should be included in an academic paper following academic discourse.					
3	I believe that I have the necessary knowledge and skills for academic writing.					
4	I can handle academic writing tasks (thesis, articles, proceedings, etc.) even if they are challenging.					
5	I can always do a good job in an academic writing task (thesis, article, proceeding, etc.) when I have enough time to write.					
6	I can successfully complete an academic writing task (thesis, original article, etc.) even if it is challenging.					

* The scales were developed in Turkish. The English versions of the scales serve as a recommendation. The scales were translated by a professional language editing service to enable an understanding of the statements.

APPENDIX 2: SCREE PLOTS OF THE SCALES

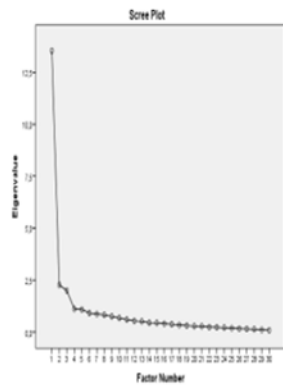


Figure 1: SAW Scree Plot Graph

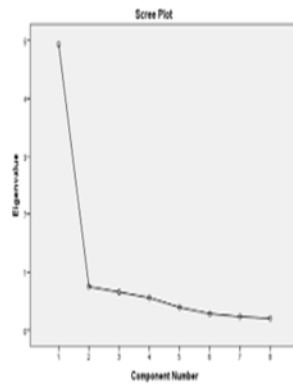


Figure 2: AWMGO Scree Plot Graph

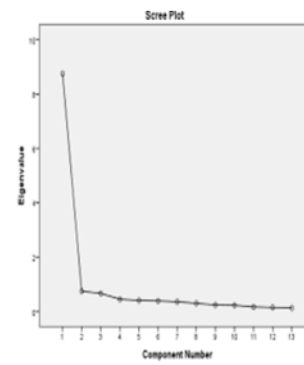


Figure 3: AWMGEN Scree Plot Graph

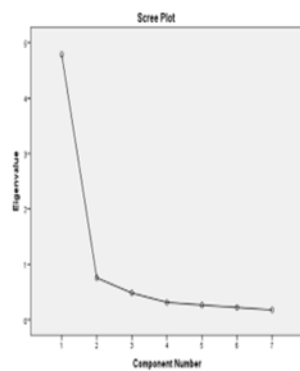


Figure 4: VAAW Scree Plot Graph

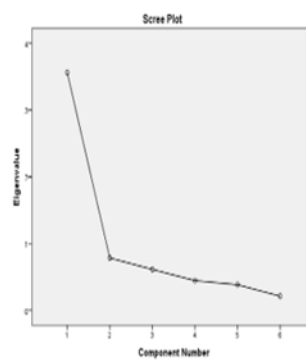


Figure 5: AWSE Scree Plot Graph

APPENDIX 3: EFA RESULTS**EFA results for the three-factor SAW Scale**

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization^a

	Communalities		Pattern Matrix ^a			
	Initial	Extraction	Factor	PERF	REF	PLAN
SAW1	.590	.465	SAW12	.875		
SAW2	.711	.646	SAW11	.871		
SAW3	.665	.547	SAW13	.799		
SAW4	.745	.716	SAW21	.776		
SAW5	.726	.705	SAW14	.750		
SAW6	.632	.579	SAW22	.728		
SAW7	.532	.407	SAW10	.716		
SAW8	.663	.433	SAW20	.709		
SAW9	.578	.364	SAW17	.664		
SAW10	.728	.558	SAW18	.653		
SAW11	.720	.585	SAW19	.607		
SAW12	.771	.704	SAW15	.578		
SAW13	.820	.713	SAW16	.461		
SAW14	.715	.604	SAW8	.330		
SAW15	.546	.372	SAW9	.324		
SAW16	.425	.339	SAW28		.786	
SAW17	.707	.565	SAW29		.742	
SAW18	.703	.607	SAW24		.724	
SAW19	.646	.549	SAW27		.666	
SAW20	.727	.588	SAW25		.640	
SAW21	.781	.660	SAW26		.618	
SAW22	.727	.613	SAW30		.455	
SAW23	.518	.328	SAW23		.398	
SAW24	.690	.519	SAW4			.843
SAW25	.712	.488	SAW6			.791
SAW26	.771	.691	SAW5			.781
SAW27	.757	.678	SAW3			.728
SAW28	.708	.605	SAW2			.562
SAW29	.639	.494	SAW1			.506
SAW30	.529	.416	SAW7			.411

a. Rotation converged in 8 iterations.

Single Factor Scales EFA Results: AWMGO, AWMGEN, VAAW and AWSE

Communalities	Component Matrix ^a			
	Initial	Extraction	Component	
			1	
AWMGO1	1.000	.614	AWMGO5	.872
AWMGO2	1.000	.645	AWMGO4	.861
AWMGO3	1.000	.726	AWMGO3	.852
AWMGO4	1.000	.741	AWMGO2	.803
AWMGO5	1.000	.761	AWMGO1	.784
AWMGO6	1.000	.563	AWMGO7	.755
AWMGO7	1.000	.570	AWMGO6	.751
AWMGO8	1.000	.313	AWMGO8	.560
AWMGEN1	1.000	.597	AWMGEN12	.867
AWMGEN2	1.000	.725	AWMGEN5	.863
AWMGEN3	1.000	.588	AWMGEN11	.860
AWMGEN4	1.000	.667	AWMGEN13	.855
AWMGEN5	1.000	.746	AWMGEN2	.852
AWMGEN6	1.000	.673	AWMGEN6	.820
AWMGEN7	1.000	.661	AWMGEN4	.817
AWMGEN8	1.000	.594	AWMGEN7	.813
AWMGEN9	1.000	.657	AWMGEN9	.811
AWMGEN10	1.000	.622	AWMGEN10	.789
AWMGEN11	1.000	.739	AWMGEN1	.773
AWMGEN12	1.000	.752	AWMGEN8	.770
AWMGEN13	1.000	.731	AWMGEN3	.767
VAAW1	1.000	.752	VAAW2	.887
VAAW2	1.000	.787	VAAW5	.881
VAAW3	1.000	.712	VAAW1	.867
VAAW4	1.000	.751	VAAW4	.867
VAAW5	1.000	.776	VAAW3	.844
VAAW6	1.000	.518	VAAW6	.720
VAAW7	1.000	.492	VAAW7	.701
AWSE1	1.000	.484	AWSE5	.857
AWSE2	1.000	.541	AWSE3	.833
AWSE3	1.000	.694	AWSE4	.778
AWSE4	1.000	.605	AWSE2	.735
AWSE5	1.000	.735	AWSE6	.711
AWSE6	1.000	.506	AWSE1	.695

Extraction Method:
Principal Component
Analysis.

a. 1 component
extracted.

APPENDIX 4: CFA RESULTS

Path Diagrams of the Scales (t-values)

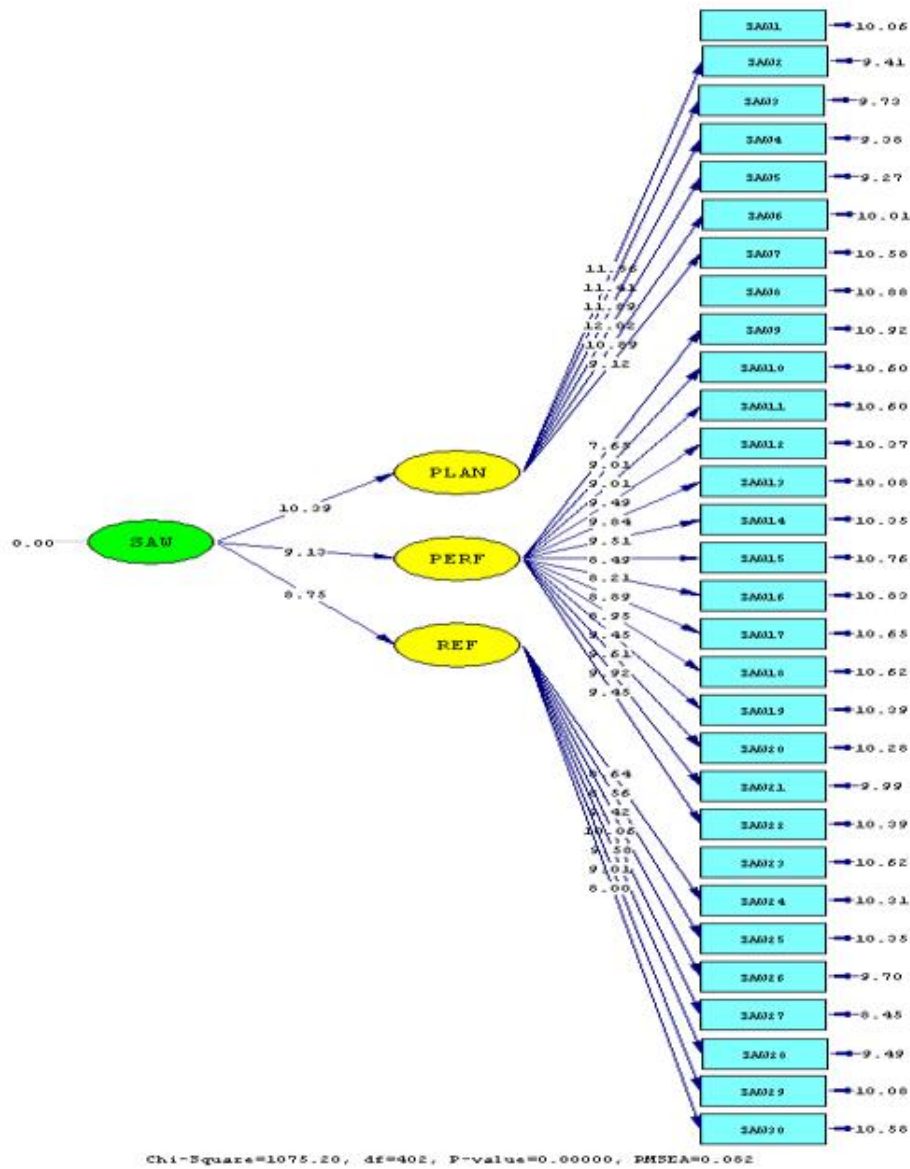
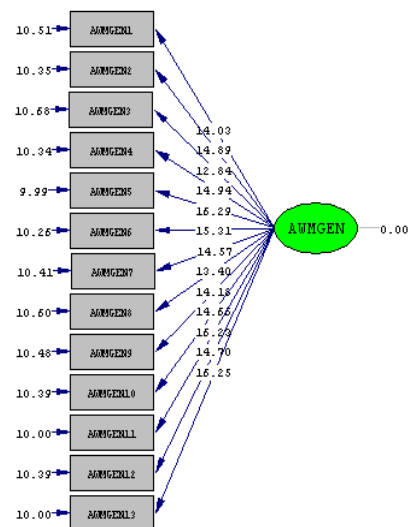


Figure 6: SAW Path Diagram



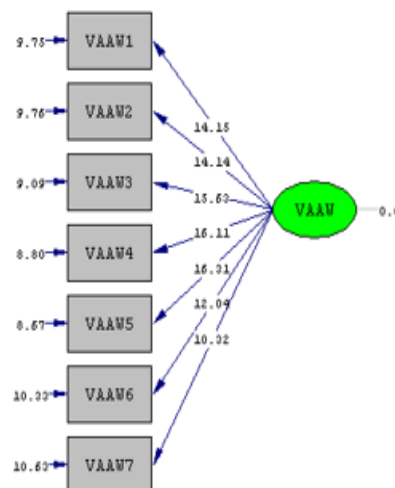
Chi-Square=39.71, df=18, P-value=0.00000, RMSEA=0.078

Figure 7: AWMGO Path Diagram



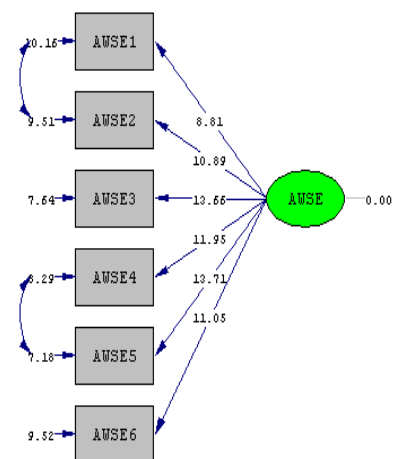
Chi-Square=131.27, df=57, P-value=0.00000, RMSEA=0.082

Figure 8: AWMGEN Path Diagram



Chi-Square=22.91, df=11, P-value=0.00000, RMSEA=0.075

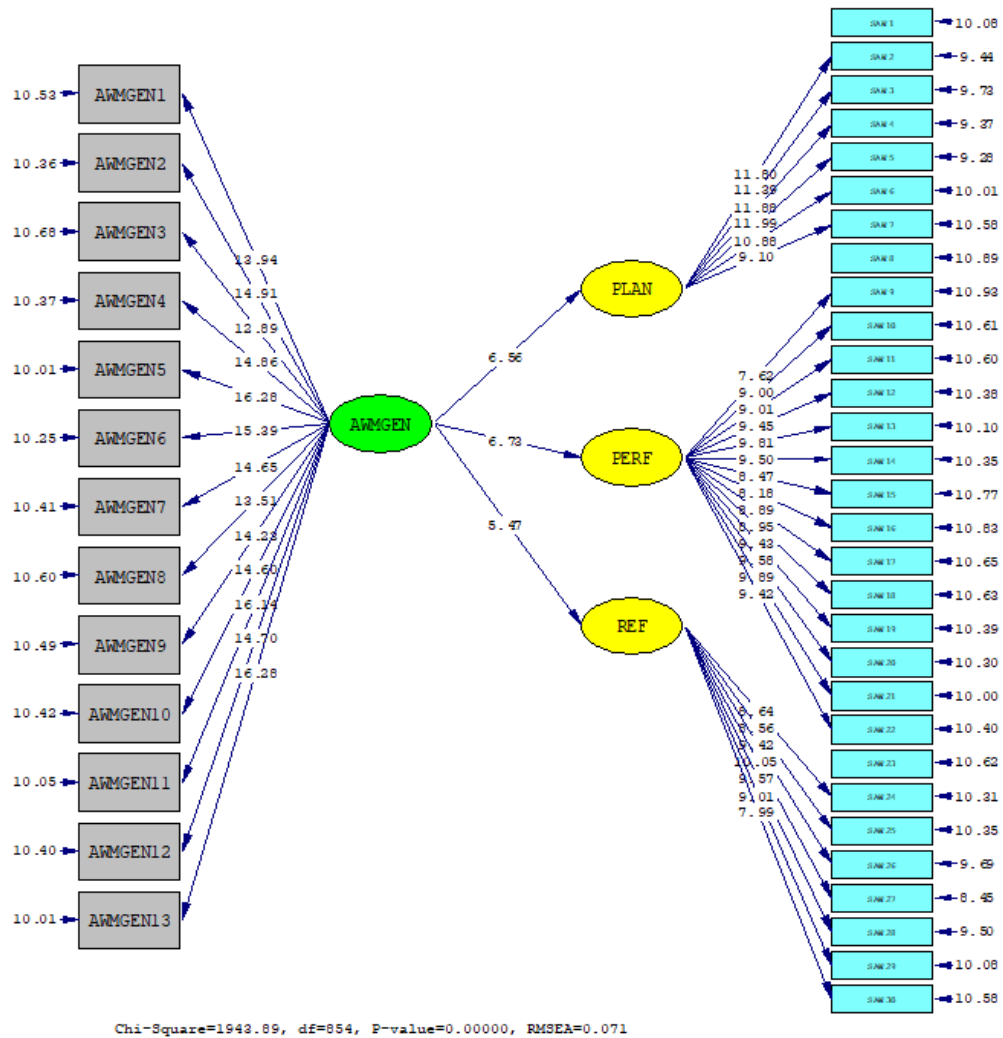
Figure 9: VAAW Path Diagram



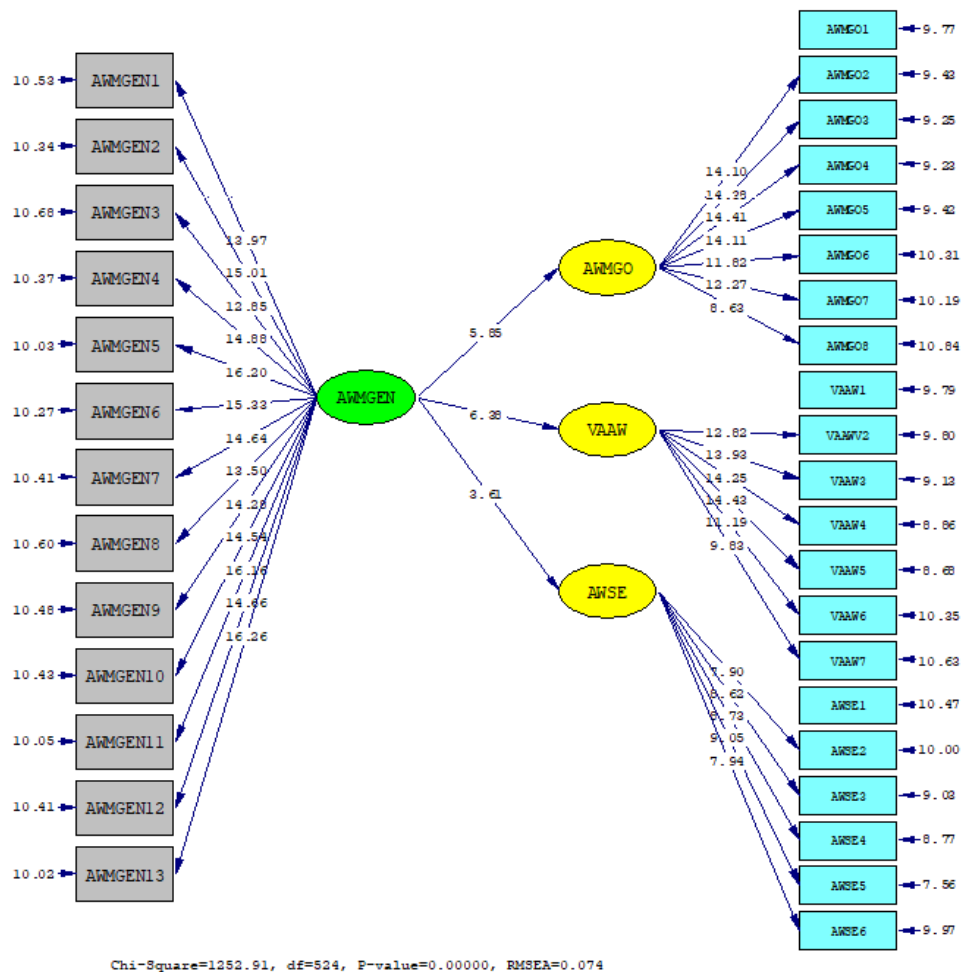
Chi-Square=13.27, df=7, P-value=0.00000, RMSEA=0.078

Figure 10: AWSE Path Diagram

APPENDIX 5: Hypothesis 1 (H1) (t-values)



APPENDIX 6: Hypothesis 2 (H2) (t-values)



APPENDIX 7: Hypothesis 3 (H3)- The hypothetical model (t-values)

