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Designing a Qualitative Model of Factors Influencing Academic Competence among Female Secondary School Students: A Thematic Analysis Study Based on Triangulation

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A B S T R A C T

Objective: This study aimed to develop a context-sensitive qualitative model of the factors influencing the academic competence of female secondary school students in Arak, Iran, through the triangulation of perspectives from academic experts, experienced teachers, and documentary sources.

Methods and Materials: This qualitative study employed thematic analysis based on Braun and Clarke's six-phase framework. Participants included 14 academic experts in educational psychology, education, and school counseling and 20 experienced teachers with at least 10 years of successful teaching experience, selected through criterion-based and snowball sampling. In addition, three high-level educational policy documents and 42 credible scientific sources were reviewed. Data were collected through in-depth semi-structured interviews and document analysis and were coded and analyzed using MAXQDA 2022. The trustworthiness of the findings was established through data-source triangulation and member checking.

Findings: The analysis generated 487 initial codes, 87 preliminary themes, 39 subthemes, 18 main themes, and four overarching dimensions. The individual dimension comprised academic motivation, learning self-regulation, academic self-efficacy, cognitive characteristics, affective-personality characteristics, and mental health. The educational dimension included classroom psychosocial climate, teachers' instructional styles, curriculum quality, academic assessment, educational facilities and resources, and interpersonal relationships at school. The family dimension encompassed parenting style, family cultural capital, socioeconomic status, family academic support, and parental academic expectations. The social dimension included peer culture, gender stereotypes, media and cyberspace, and community social capital. Learning self-regulation and intrinsic motivation emerged as the most prominent factors. Triangulation indicated that seven main themes were shared across all three data sources, while member checking demonstrated an overall agreement rate of 95.6%.

Conclusion: The proposed model provides a comprehensive indigenous framework for understanding female students' academic competence by integrating individual, educational, familial, and social determinants.

Keywords: *Academic competence; qualitative model; female students; secondary education; thematic analysis; triangulation.*

1. Introduction

Academic competence is a multidimensional construct that reflects students' capacity to mobilize cognitive, motivational, emotional, behavioral, and interpersonal resources in order to meet educational demands and attain meaningful learning outcomes. It extends beyond examination scores or grade point averages and encompasses the ability to understand academic tasks, regulate learning processes, sustain effort, solve problems, communicate knowledge, adapt to instructional expectations, and function effectively within educational environments. From this perspective, academic competence represents both a developmental outcome and a dynamic capability that can be strengthened through appropriate educational experiences. Contemporary discussions of competence increasingly emphasize the integration of knowledge, skills, attitudes, and context-sensitive performance rather than the isolated acquisition of disciplinary information (Toshtemirovich, 2024; Van Vucht Tijssen & De Weert, 2023). Such an integrated understanding is particularly important during secondary education, when students encounter increasingly complex curricular demands, consequential academic decisions, identity development, and social pressures that may shape their subsequent educational and occupational trajectories.

The conceptualization of academic competence has developed across different educational levels and disciplinary contexts. In higher education, competence has been described as the ability to perform academic tasks independently, apply disciplinary knowledge, engage in research, communicate effectively, and respond to the quality standards of educational institutions (Boerchi et al., 2021; Perrenet et al., 2017). Research on academic employees has similarly shown that competence includes not only subject-matter expertise but also pedagogical adaptability, technological literacy, collaboration, critical thinking, and responsiveness to rapidly changing institutional environments (ChaaCha, 2024; Turk, 2021). Studies of international students have further demonstrated that academic competence is intertwined with intercultural adaptation, language proficiency, academic communication, and the ability to navigate unfamiliar educational systems (Drozdova & Ţaulean, 2022; Han et al., 2025). Although these studies have primarily focused on university settings, they reinforce the view that academic competence is an integrated and context-dependent capacity whose foundations are established much earlier in students' educational development.

At the school level, academic competence is commonly understood as students' perceived and demonstrated ability to successfully perform academic tasks, meet learning expectations, and manage the psychological and behavioral requirements of schooling. Measurement research among adolescents has identified academic competence as a construct comprising such elements as motivation, learning engagement, self-regulation, academic self-concept, persistence, and effective academic behavior (Asl-Mohammadalizad et al., 2021; Pakdaman et al., 2017). These dimensions indicate that students may possess adequate cognitive ability but still experience low academic competence when they lack confidence, strategic learning skills, emotional control, or supportive educational relationships. Conversely, students who perceive themselves as academically capable are generally more willing to select challenging tasks, persist after setbacks, use adaptive learning strategies, and interpret difficulties as manageable rather than as evidence of personal inadequacy.

Academic competence is closely associated with a wide range of desirable educational and developmental outcomes. Evidence from university settings suggests that stronger academic competence contributes to professional commitment, entrepreneurial capacity, and research performance by enabling students to translate academic experiences into practical and career-related capabilities (Abdollahi & Taabodi, 2019; Guo et al., 2021; Heydari et al., 2019). Academic competence is also reflected in more specialized forms of performance, including academic writing, research engagement, and the ability to produce coherent scholarly work. Studies of academic writing have shown that students' competence depends on the integration of conceptual knowledge, language skills, argumentation, information organization, and familiarity with academic conventions (Santi & Solvera, 2024; Sunaiyah et al., 2022). In digital learning contexts, competence additionally involves the capacity to locate, evaluate, and apply online information, participate in technology-mediated learning, and manage the autonomy required by virtual education (Ahmed et al., 2024; Flores-Mamani et al., 2024). These findings demonstrate that academic competence is not restricted to a single classroom behavior but influences students' broader ability to learn, communicate, adapt, and progress across educational settings.

One of the most consistently identified foundations of academic competence is self-regulated learning. Self-

regulation enables students to establish goals, plan their learning, select appropriate cognitive and metacognitive strategies, monitor comprehension, manage time and effort, and revise ineffective approaches. An intervention developed for lower-secondary students showed that self-regulation training could improve multiple components of academic competence, highlighting the malleability of this construct and the importance of explicit strategy instruction (Asl-Mohammadalizad et al., 2019). Cognitive empowerment programs based on executive brain functions have likewise been found to improve academic competence among underachieving gifted students by strengthening attention control, working memory, cognitive flexibility, planning, and inhibition (Yavari et al., 2024). Similarly, logical-mathematical intelligence training and brain-compatible instructional approaches have been associated with improvements in students' academic competence and achievement, suggesting that educational interventions can enhance competence when they activate cognitive processes and align instruction with learners' developmental needs (Akhsh, 2024; Khavarzamini et al., 2023).

Motivational and emotional processes constitute another central domain of academic competence. Students who perceive academic tasks as valuable, experience intrinsic motivation, and expect that effort will lead to improvement are more likely to engage deeply and persist. In contrast, negative academic emotions, chronic anxiety, low enjoyment, and poor school quality of life may undermine students' perceptions of competence and reduce their willingness to participate in learning activities. Research has shown that positive and negative academic emotions, together with students' quality of school life, significantly predict academic competence (Bahadori Khosroshahi & Farzanmehr, 2025). Academic self-efficacy also plays an important role because it shapes how students interpret task difficulty, regulate effort, and respond to failure. Evidence indicates that academic self-efficacy and the quality of teacher–student relationships may mediate the associations of mindfulness, maladaptive personality characteristics, and rumination with academic competence (Fathi et al., 2024). Thus, students' competence is not solely determined by what they know; it is also shaped by whether they believe they can succeed and whether they can regulate the emotional experiences accompanying academic demands.

Emotion regulation is particularly relevant during adolescence because students must manage examination stress, interpersonal tensions, performance comparisons, and uncertainty about future educational pathways. Cognitive emotion-regulation strategies can mediate the relationship between perceived social support and academic competence, indicating that supportive relationships may enhance competence partly by helping students interpret and manage academic stress more adaptively (Ata Khamenei et al., 2022). Likewise, perceived self-efficacy, emotion regulation, and parenting styles jointly contribute to the prediction of academic competence (Mahmoudpour & Darba, 2020). When students possess adaptive emotional strategies, they may be better able to maintain attention, recover from failure, seek assistance, and continue working under pressure. Conversely, maladaptive emotional responses may contribute to school anxiety, low academic self-esteem, and impaired competence, particularly among students already experiencing academic difficulties (Ghaderi Dalir et al., 2024). The association between perfectionism and social functioning also appears to operate partly through social anxiety and academic competence, further demonstrating the interdependence of academic, emotional, and interpersonal adjustment (Demirtas-Zorbaz, 2020).

The instructional environment is another major determinant of academic competence. Students' perceptions of teaching style influence whether they experience autonomy, emotional safety, intellectual stimulation, and meaningful participation. A supportive and student-centered teaching style may foster academic resilience through its contribution to students' sense of academic competence (Afzali & Hosseinian, 2024). Teacher and peer social support can also affect academic achievement and academic vitality indirectly through academic competence and academic emotions (Aghamirli et al., 2022). These relationships suggest that academic competence develops within social interactions rather than solely within the individual learner. When teachers communicate clear expectations, provide constructive feedback, recognize effort, encourage student voice, and create opportunities for active learning, students are more likely to interpret themselves as capable participants in the educational process.

Curriculum design, pedagogical models, instructional quality, and learning resources also shape competence by determining the nature of the opportunities available to students. Pedagogical models that connect curriculum content with applied learning, active participation, and competence-based assessment can contribute to the development of academic capabilities (Mendiburu Rojas et al., 2024). Evidence also indicates that curriculum quality, teacher competence, and access to appropriate learning

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facilities are associated with stronger academic achievement (Sasia & Handoyo, 2024). From a broader perspective, effective competence development requires a pedagogical environment in which students can integrate conceptual understanding, transferable skills, problem solving, communication, and reflective learning. Qualitative research on the pedagogical landscape of academic and transversal competencies has emphasized that both teachers' instructional experiences and students' lived experiences must be considered when designing such environments (Sigdel & Acharya, 2023). Therefore, a model of academic competence should include not only students' internal abilities but also the instructional conditions that either enable or constrain their expression.

The rapid development of digital education has further expanded the conditions under which academic competence is formed. Online learning can provide flexibility, access to diverse educational materials, and opportunities for autonomous learning, but it also requires time management, technological readiness, sustained attention, and digital self-regulation. Research on students' experiences during the COVID-19 lockdown revealed that self-perceived academic competence was affected by the abrupt transition to online learning, psychological pressures, unequal learning conditions, and the availability of social and institutional support (Law-van Wyk et al., 2025). Online learning has also been reported to contribute to competence development when students have adequate access, instructional guidance, and opportunities for meaningful interaction (Ahmed et al., 2024). Accordingly, digital environments should be understood as both potential resources and possible risk contexts, depending on students' technological access, media literacy, family supervision, and ability to regulate online behavior.

Family characteristics form another essential layer of influence. Parenting practices communicate expectations, structure daily routines, regulate access to resources, and shape students' beliefs about their own ability. Perceived parenting practices have been incorporated into models of adolescent academic competence alongside self-handicapping, procrastination, academic vitality, and motivation, showing that family interactions may affect competence both directly and through motivational and behavioral pathways (Jafari et al., 2024). Authoritative parenting, characterized by warmth, responsiveness, clear expectations, and appropriate behavioral structure, is generally more compatible with autonomous motivation and adaptive academic behavior than authoritarian, permissive, or neglectful patterns. Family academic support also includes monitoring schoolwork, providing educational resources, creating a suitable study environment, discussing academic goals, and responding constructively to failure.

The role of family support is especially important for female students, whose educational experiences may be influenced by parental expectations, cultural beliefs concerning gender roles, and unequal access to educational opportunities. Research among female students has shown that academic support mediates the relationship between academic competence and academic disengagement, suggesting that supportive educational relationships can prevent competent students from becoming psychologically disconnected from school (Omidi Cheshmeh-Kaboud et al., 2022). Such support may originate from parents, teachers, peers, counselors, or broader institutional networks. When support is conditional, excessively controlling, or focused exclusively on grades, however, it may contribute to anxiety and fragile self-worth rather than genuine competence. Consequently, the quality and meaning of support are as important as its quantity.

Social and cultural contexts also determine how academic competence is recognized, encouraged, and translated into outcomes. Peer groups can reinforce achievement-oriented values, provide collaborative learning opportunities, and normalize persistence, but they can also promote disengagement, comparison, or avoidance of academic effort. Social support from teachers and peers can enhance competence, achievement, and academic vitality through emotional and motivational mechanisms (Aghamirli et al., 2022). At a broader level, cultural expectations may define which forms of achievement are considered appropriate for female students and may influence their educational aspirations, field choices, and willingness to display competence. Evidence regarding gender inequalities indicates that women's stronger performance in secondary school does not always translate proportionally into university outcomes, partly because of discrimination, competitive climate, and institutional structures (Galos, 2024). These findings underscore the necessity of examining gender stereotypes and implicit expectations when studying female students' academic development.

Academic competence should therefore be understood as the product of interactions among individual characteristics, educational processes, family conditions, and wider social structures. Existing studies have generated valuable findings regarding self-regulation, self-efficacy, parenting, emotional regulation, teaching style, social support, curriculum, digital

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learning, and psychological adjustment. Nevertheless, much of this research has relied on quantitative, variable-centered designs that test predetermined relationships among selected constructs. Although such studies identify important predictors and mediators, they may not fully capture how different stakeholders understand competence, how determinants operate together in a specific educational culture, or which factors are emphasized in everyday school practice. Furthermore, some studies have examined academic competence primarily among university students, international learners, academic employees, or specific clinical and underachieving groups, limiting their direct applicability to female secondary school students (Boerchi et al., 2021; Drozdova & Ţaulean, 2022; Guo et al., 2021; Han et al., 2025).

Another limitation of the existing literature is the fragmentation of explanatory perspectives. Psychological studies often emphasize motivation, self-efficacy, emotion regulation, anxiety, or personality, whereas educational research tends to focus on teaching practices, curriculum, assessment, or learning facilities. Family studies examine parenting and support, while sociological analyses highlight gender, culture, discrimination, and social capital. Yet students experience these factors simultaneously and interactively. A student's self-regulation may be strengthened by teacher feedback, enabled by family routines, disrupted by online distraction, or constrained by gendered expectations. Similarly, academic self-efficacy may reflect previous achievement, parental messages, peer comparison, and institutional recognition. An integrated model is therefore required to explain how these domains converge in shaping academic competence.

Qualitative inquiry is particularly appropriate for developing such a model because it can reveal participants' interpretations, identify contextually specific mechanisms, and integrate evidence from multiple sources. Interviews with academic experts can contribute theoretical and research-based perspectives, whereas experienced teachers can provide direct knowledge of classroom interactions, school practices, student behavior, and barriers that may remain invisible in standardized measures. Documentary analysis can further determine whether stakeholder perspectives are consistent with educational policies and scientific literature. Triangulating these sources can enhance the credibility, comprehensiveness, and contextual relevance of the resulting framework. It can also identify themes that are shared across sources as well as those uniquely emphasized by experts, practitioners, or written evidence.

In Iran, the need for such an integrated model is particularly significant because female secondary school students' academic competence develops within a combination of centralized educational policies, examination-oriented practices, family expectations, expanding digital environments, and culturally embedded gender norms. Existing Iranian research has examined the measurement of academic competence, its psychological predictors, and the effects of selected interventions (Asl-Mohammadalizad et al., 2019, 2021; Pakdaman et al., 2017). Other studies have demonstrated the importance of parenting practices, academic support, cognitive emotion regulation, teacher–student relationships, and school-related emotions (Ata Khamenei et al., 2022; Bahadori Khosroshahi & Farzanmehr, 2025; Fathi et al., 2024; Mahmoudpour & Darba, 2020; Omidi Cheshmeh-Kaboud et al., 2022). However, a comprehensive indigenous qualitative model integrating individual, educational, family, and social influences through the simultaneous triangulation of academic experts, experienced teachers, and documentary sources remains insufficiently developed.

Accordingly, the aim of the present study was to design a qualitative model of the factors influencing academic competence among female secondary school students in Arak through thematic analysis and the triangulation of academic experts' perspectives, experienced teachers' accounts, and written educational and scientific sources.

2. Methods and Materials

2.1. Study Design and Participants

This study was conducted within the interpretivist paradigm, which assumes that reality is multiple, subjective, and socially constructed through individuals' experiences and interpretations. Accordingly, the study sought to understand how academic experts and experienced teachers conceptualized the factors contributing to academic competence among female secondary school students. A qualitative research approach was adopted, and thematic analysis was employed as the principal methodological strategy. The analysis followed the six-phase framework developed by Braun and Clarke in 2006. Thematic analysis was selected because the purpose of the study was to identify, organize, and provide a detailed interpretation of recurring patterns across several sources of qualitative data rather than to generate a formal theory, as in grounded theory, or to focus exclusively on the lived experience of a particular phenomenon, as in phenomenological research.

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The flexibility of thematic analysis also made it possible to combine inductive coding derived directly from the data with deductive attention to concepts identified in the theoretical literature on academic competence.

The research field comprised female secondary schools and higher education institutions in Arak, Markazi Province, Iran. Three independent sources of data were included to strengthen the comprehensiveness and credibility of the findings: academic experts, experienced female teachers, and written sources. The first group consisted of full-time faculty members with the academic rank of assistant professor, associate professor, or professor in educational psychology, education, curriculum planning, educational administration, or school counseling. Eligible experts were employed at universities in Markazi Province, including Arak University, Islamic Azad University of Arak, and Farhangian University, Arak Campus. The inclusion criteria were at least five years of teaching experience at the master's or doctoral level and publication of at least three peer-reviewed articles addressing academic motivation, learning, academic competence, or closely related educational constructs. Academic experts were recruited through snowball sampling. The process began with a recognized scholar in the relevant field, who was subsequently asked to recommend one or two additional experts meeting the eligibility criteria. Recruitment continued until sufficient conceptual depth and theoretical saturation were achieved. Fourteen academic experts ultimately participated.

The second participant group included experienced female teachers employed in public, private, and selective public female upper-secondary schools in Arak. Eligibility required at least 10 years of continuous teaching experience and evidence of successful educational and developmental performance, as confirmed by school principals and relevant subject-group supervisors. Indicators of successful performance included high professional evaluation scores, strong student pass rates in final examinations or the national university entrance examination, and documented examples of improvement in students' motivation or academic performance. Teachers were selected through criterion-based purposive sampling in cooperation with the education departments of Districts 1 and 2 of Arak. Maximum variation was considered in relation to teaching experience, which ranged from 10 to 25 years, school type, and subject area, including mathematics, experimental sciences, and humanities. Twenty teachers were included in the final sample.

Sampling continued until subsequent interviews no longer generated substantial new codes, categories, or interpretations. Theoretical saturation was observed after the twelfth expert interview and the seventeenth teacher interview. Nevertheless, two additional experts and three additional teachers were interviewed to verify saturation and ensure that potentially divergent perspectives were not overlooked. The third source of data consisted of written materials, including three major Iranian educational policy documents: the Fundamental Reform Document of Education, the National Curriculum, and the Theoretical Foundations of the Fundamental Reform Document. In addition, 42 credible Iranian and international scholarly sources related to academic competence and its individual, educational, familial, and social determinants were reviewed.

Following the receipt of institutional and administrative permissions, data collection was conducted over a three-month period from December 2025 to February 2026. All participants received information about the study's aims, procedures, voluntary nature, confidentiality protections, and right to withdraw without penalty. Written informed consent was obtained before the interviews. Participant anonymity was protected through identification codes, such as E1 for academic experts and T1 for teachers. The names of participants and their schools or institutions were not included in transcripts, analytical files, or research reports.

2.2. Measures

The primary data collection tool was an in-depth semi-structured interview guide developed by the researchers after reviewing the theoretical foundations and previous research on academic competence. Semi-structured interviews were considered appropriate because they provided a consistent framework across participants while allowing the interviewer to explore individual experiences, interpretations, examples, and contextual factors in greater depth. The guide contained broad, open-ended questions designed to elicit participants' understandings of academic competence and the factors that promote or hinder it among female secondary school students.

Participants were initially asked to describe the characteristics and dimensions of an academically competent female secondary school student. They were then invited to identify the most influential factors contributing to academic competence, with prompts addressing individual, educational, familial, and social domains. Additional

questions explored common barriers and challenges threatening the academic competence of female students in Arak, effective school- or district-level programs previously implemented to improve students' competence, and the components that should be included in a comprehensive educational intervention designed to strengthen academic competence. Follow-up questions and probes were used when necessary to clarify meanings, obtain concrete examples, explore contradictory responses, and encourage participants to elaborate on culturally specific influences, including family expectations, gender stereotypes, peer relationships, and the role of digital media.

Each interview lasted approximately 60 to 90 minutes and was conducted in a quiet and confidential setting agreed upon with the participant. With explicit permission, interviews were audio-recorded to ensure accurate preservation of the participants' statements. The 34 interviews were transcribed verbatim, resulting in approximately 412 pages of textual data formatted in 14-point font with 1.5-line spacing. The researcher reviewed each transcript alongside the corresponding audio recording to correct omissions, transcription errors, and ambiguities before coding.

A researcher-developed content analysis form was used to examine the policy documents and scholarly literature. The form was organized around broad areas identified in the literature, including academic motivation, self-regulated learning, academic self-efficacy, cognitive and emotional characteristics, teaching practices, curriculum quality, assessment, school climate, family support, parenting practices, socioeconomic conditions, peer culture, gender-related expectations, media use, and social capital. Although these headings provided an initial analytical orientation, the researcher remained open to codes and themes that were not represented in the preliminary framework. Relevant passages from each written source were extracted, documented, and entered into the qualitative database for comparison with the interview findings.

2.3. Data Analysis

The interview transcripts and documentary materials were imported into MAXQDA 2022 and analyzed according to Braun and Clarke's six-phase thematic analysis procedure. The analysis began with familiarization, during which the researcher repeatedly read the transcripts, reviewed the audio recordings, examined documentary excerpts, and recorded preliminary observations and analytic memos. This stage enabled close engagement with the content, context, tone, and recurring meanings within and across the three data sources.

During the initial coding phase, meaningful units of data were identified at the level of words, sentences, or paragraphs and assigned concise descriptive or interpretive codes. Coding was primarily inductive so that participants' perspectives could shape the analytical structure; however, theoretically informed concepts were also considered when they were clearly supported by the data. For example, a statement indicating that parents who devoted time to their daughters' schoolwork contributed to better academic performance was coded as parental support for academic tasks. Coding was conducted across the complete dataset rather than only in selected sections, and similar statements from experts, teachers, and written sources were compared continuously.

The initial codes were subsequently grouped according to semantic similarity and conceptual relationships. Related codes were organized into preliminary themes. For instance, parental assistance with homework, parental academic expectations, and the provision of learning resources at home were initially grouped under family academic support. The preliminary themes were then reviewed at two levels. First, the coherence of the codes within each theme was examined to determine whether they represented a meaningful common pattern. Second, the themes were compared with the entire dataset to assess whether they adequately reflected the range and complexity of participants' accounts and documentary evidence. Themes that overlapped substantially were merged, whereas broad or internally inconsistent themes were divided or redefined.

In the next phase, each theme was clearly defined and named according to its central organizing concept. Themes were arranged hierarchically as overarching dimensions, main themes, and subthemes. Relationships among the themes were examined to develop an integrated qualitative model of academic competence. The final analytical phase involved constructing a coherent narrative account and a network model demonstrating how individual, educational, familial, and social factors interacted in shaping female students' academic competence.

The trustworthiness of the findings was enhanced through data-source triangulation and member checking. Themes identified in interviews with academic experts were systematically compared with themes derived from teacher interviews and documentary analysis. Themes appearing consistently across all three sources were considered to have

particularly strong evidential support, while source-specific themes were retained when they provided meaningful contextual insight. After the preliminary model had been developed, a summary of the main codes, themes, definitions, and proposed relationships was provided to six participants, comprising three academic experts and three teachers. They were asked to assess whether the interpretations accurately represented their views and to identify any unclear, incomplete, or inaccurate elements. Their comments were incorporated into the final refinement of the model. Throughout the research process, scientific integrity was maintained by preserving the original data, documenting analytical decisions, avoiding selective alteration or misrepresentation of participants' statements, and reporting the findings in accordance with accepted qualitative research and ethical standards.

3. Findings and Results

Academic experts: Using snowball sampling, 14 full-time faculty members holding the academic rank of assistant professor, associate professor, or professor in educational psychology, educational sciences, and school counseling at universities in Markazi Province participated in the study. Of the 14 experts, 5 participants (35.7%) were professors and 9 participants (64.3%) were associate professors. Their mean teaching experience at the postgraduate level was 16.6 years (SD = 4.9), and the mean number of peer-reviewed research articles they had published in the fields of academic motivation, learning, or academic competence was 18.9 articles (SD = 11.2).

Experienced teachers: Using criterion-based sampling, 20 female teachers employed in public, private, and selective public female upper-secondary schools in Arak were selected. All participants had at least 10 years of continuous teaching experience and had been recognized by their school principals and relevant subject-group supervisors as successful in promoting students' academic and developmental outcomes in recent years. The participating teachers had a mean teaching experience of 17.9 years (SD = 4.3). Regarding school type, 7 teachers (35%) were selected from selective public schools, 7 teachers (35%) from ordinary public schools, and 6 teachers (30%) from private schools. Regarding teaching discipline, 7 participants (35%) taught experimental sciences, 7 participants (35%) taught mathematics, and 6 participants (30%) taught humanities.

The qualitative data obtained from semi-structured interviews with academic experts and teachers, together with the content analysis of educational documents and scientific literature, were analyzed according to the six-phase thematic analysis framework developed by Braun and Clarke (2006), using MAXQDA 2022.

Phases One and Two: Familiarization with the Data and Generation of Initial Codes

All 34 interviews were transcribed in full immediately after completion. The complete interview transcripts comprised 412 pages formatted in 14-point font with 1.5-line spacing. The researcher read each interview transcript in full at least three times and recorded preliminary notes in the margins. During the coding phase, each meaningful segment of an interview transcript or document was assigned a descriptive label or code. Coding was conducted primarily through an inductive approach and with minimal reliance on predetermined assumptions. A total of 487 initial codes were extracted from the three data sources. The distribution of the initial codes by data source was as follows: 191 codes (39.2%) were obtained from interviews with academic experts, 218 codes (44.8%) from interviews with teachers, and 78 codes (16.0%) from written sources.

Phases Three to Five: Searching for, Reviewing, and Naming Themes

During the theme-searching phase, the 487 initial codes were categorized according to semantic similarity, conceptual relationships, and thematic association and were subsequently organized into preliminary themes. At this stage, 87 preliminary themes were identified. The preliminary themes were then reviewed at two levels. At the first level, which involved reviewing the themes in relation to the coded extracts, the researchers ensured that all codes assigned to each theme were conceptually consistent with that theme. At this stage, 12 preliminary themes were merged or divided because of heterogeneity among their constituent codes. At the second level, which involved reviewing the themes in relation to the entire dataset, the revised themes were compared against all interviews and documents to ensure that they adequately represented the complete body of data. Following this review, 4 overarching themes or dimensions and 38 subthemes were finalized. After member checking, one new subtheme, namely the quality of school counseling services, was added, resulting in a final model comprising 4 overarching dimensions, 18 main themes, and 39 subthemes.

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Table 1 presents the hierarchical structure of the themes, including the overarching dimensions, main themes, subthemes, and number of associated codes.

Table 1

Hierarchical Structure of the Themes Extracted from the Qualitative Analysis

Dimension	Main Theme	Subtheme	Number of Codes
Individual factors	Academic motivation	Intrinsic motivation, including goal orientation, curiosity, and enjoyment of learning	32
		Extrinsic motivation, including grades, approval from others, and avoidance of punishment	18
		Academic task value, including the perceived importance of education for the future	14
	Self-regulated learning	Planning and goal setting	28
		Cognitive strategies, including rehearsal, elaboration, and organization	24
		Metacognitive strategies, including monitoring, control, and evaluation	22
		Resource management, including time, effort, and study environment	19
	Academic self-efficacy	Belief in personal abilities	21
		Expectancy for success	16
		Persistence in the face of failure	14
	Cognitive characteristics	Learning styles, including visual, auditory, and kinesthetic styles	12
		Problem-solving ability	18
		Critical thinking	15
	Affective-personality characteristics	Emotional intelligence, including recognizing and managing emotions	17
		Academic resilience	13
		Intelligence beliefs, including growth versus fixed mindsets	11
	Mental health	Test anxiety	16
		Depression and academic disengagement	9
		Self-esteem	12
Educational factors	Psychosocial classroom climate	Teachers' emotional support	24
		Mutual respect between teachers and students	18
		Opportunities for participation and expression of opinions	15
	Teacher instructional style	Student-centered teaching, including active and participatory methods	22
		Teacher-centered teaching, including lecture-based and direct instruction	11
		Diversity of teaching methods and use of technology	14
	Curriculum quality	Relevance of content to students' needs	13
		Appropriate level of difficulty and logical sequencing	10
		Attention to the development of metacognitive skills in textbooks	8
	Academic assessment	Type of assessment, including essay-based, multiple-choice, and project-based assessment	12
		Teacher feedback	16
		Emphasis on learning rather than grades, including qualitative assessment	9
	Educational facilities and resources	Access to supplementary educational resources, including libraries and laboratories	14
		Quality of digital infrastructure, including internet access and equipment	11
		Physical school environment, including lighting, noise, and seating	7
	Interpersonal relationships at school	Peer relationships, including peer support and group cooperation	19
		Healthy academic competition	13
		Bullying and social exclusion	8
Family factors	Parenting style	Authoritative parenting, characterized by a balance between warmth and limits	26
		Authoritarian parenting, characterized by strict control and frequent criticism	11
		Permissive parenting, characterized by low expectations	7
		Neglectful parenting, characterized by insufficient attention to education	5

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	Family cultural capital	Parents' educational level	21
		Cultural resources at home, including books, magazines, and computers	14
		Family reading habits	12
	Socioeconomic status	Family income	13
		Parents' job security	8
		Educational expenditures, including private tutoring and supplementary classes	11
	Family academic support	Monitoring assignments and examinations	24
		Assistance with solving academic problems	16
		Providing a quiet study environment	13
		Encouragement and rewards for academic success	15
	Parental academic expectations	Realistic versus unrealistic expectations	18
		Emphasis on university-oriented or vocational pathways	12
		Valuing girls' education	14
Social factors	Peer culture	The value placed on education within the peer group	17
		Peer pressure toward success or underachievement	14
		Peer role models, including successful peers as examples	9
	Gender stereotypes	Traditional beliefs about women's roles in society	22
		Implicit discrimination in school or at home	13
		The role of media in reproducing stereotypes	8
	Media and cyberspace	Social media use, including cognitive preoccupation and reduced study time	19
		Online educational content, including opportunities and threats	11
		Students' media literacy	7
	Community social capital	Local support networks	6
		Role of cultural institutions, including intellectual development centers and public libraries	9
		Regional educational policies	10

As shown in Table 1, the final model comprised 4 overarching dimensions, 18 main themes or subdimensions, and 39 subthemes representing more specific indicators. The largest numbers of codes were associated with self-regulated learning, with 93 codes, and academic motivation, with 64 codes. The smallest number of codes was associated with broader social factors, with 15 codes. This distribution indicates that participants placed greater emphasis on individual and educational factors than on social factors.

Based on the hierarchical structure of the themes presented in Table 1 and the conceptual relationships among the dimensions and themes, which were identified through code co-occurrence analysis and participants' assessments of their relative importance, a network model of the factors influencing academic competence was developed. The model comprised four principal dimensions arranged within an interactive and interconnected structure.

Central core—individual factors: The individual factors dimension was positioned at the center of the model and was represented as the dimension most proximal to the phenomenon of academic competence because participants characterized it as the most direct and important category of influential factors. This dimension comprised six main themes, including academic motivation, self-regulated learning, academic self-efficacy, cognitive characteristics, affective-personality characteristics, and mental health, as well as 17 subthemes. According to the data analysis, self-regulated learning and intrinsic motivation received the greatest frequency and emphasis across participants' accounts.

Intermediate layer—educational and family factors: Educational and family factors were positioned within the intermediate layers of the model because they exerted direct effects on individual factors and indirect effects on academic competence. The educational factors dimension comprised six main themes, including the psychosocial classroom climate, teacher instructional style, curriculum quality, academic assessment, educational facilities and resources, and interpersonal relationships at school, as well as 15 subthemes. Teachers' emotional support and student-centered teaching were identified as the most influential educational factors. The family factors dimension comprised five main themes, including parenting style, cultural capital, socioeconomic status, academic support, and academic expectations, as well as 14 subthemes. Authoritative parenting and active academic support, particularly monitoring assignments and providing appropriate feedback, were mentioned more frequently than other components.

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Outer layer—social factors: The social factors dimension was positioned within the outermost layer as the broadest and most influential contextual domain, although its effects were primarily indirect and mediating. This dimension comprised four main themes, including peer culture, gender stereotypes, media and cyberspace, and community social capital, as well as 10 subthemes. Gender stereotypes, particularly among teachers, and peer culture, whether supportive or inhibiting, received the greatest emphasis.

Interactive relationships: Bidirectional arrows in the model indicate reciprocal and interactive relationships among the dimensions. For example, family factors influence individual factors, while students' academic competence may, in turn, modify parental expectations. Dashed lines indicate indirect and mediating relationships.

To enhance the credibility and trustworthiness of the qualitative findings, data-source triangulation was used by comparing the themes extracted from academic experts, teachers, and written sources. Table 2 presents themes shared across the sources and themes specific to individual sources.

Table 2

Comparison of Themes Extracted from the Three Data Sources Through Triangulation

Main Theme	Academic Experts	Teachers	Written Sources	Status
Self-regulated learning	✓	✓	✓	Comprehensive, shared across all three sources
Intrinsic motivation	✓	✓	✓	Comprehensive
Academic self-efficacy	✓	✓	✓	Comprehensive
Authoritative parenting style	✓	✓	✓	Comprehensive
Family academic support	✓	✓	✓	Comprehensive
Psychosocial classroom climate	✓	✓	✓	Comprehensive
Gender stereotypes	✓	✓	—	Shared by experts and teachers
Peer culture	—	✓	✓	Shared by teachers and written sources
Family cultural capital	✓	—	✓	Shared by experts and written sources
Problem-solving skills	✓	✓	—	Shared by experts and teachers
Emotional intelligence	✓	—	—	Specific to experts
Hidden curriculum	—	✓	—	Specific to teachers
Implicit discrimination at school	—	—	✓	Specific to written sources

As shown in Table 2, seven main themes, including self-regulation, intrinsic motivation, self-efficacy, authoritative parenting, family academic support, and the psychosocial classroom climate, were identified in all three data sources, indicating the high credibility of these themes. Eleven other themes were identified in two sources, whereas six themes appeared in only one source. These findings indicate that academic experts, teachers, and educational policy documents shared substantial agreement regarding the most important factors influencing academic competence, although each source placed greater emphasis on particular aspects. For example, academic experts focused more strongly on theoretical constructs such as emotional intelligence, whereas teachers emphasized their direct classroom experiences, including the hidden curriculum and implicitly discriminatory practices.

Following the extraction of the preliminary themes and development of the initial qualitative model, a summary of the findings, including the list of principal codes, subthemes, main themes, and their definitions, was provided to six participants comprising three academic experts and three teachers. They were asked to confirm or revise the accuracy, precision, and appropriateness of the researcher's interpretations.

The member-checking results were as follows: Of the 38 subthemes presented, 35 subthemes, equivalent to 92.1%, received full approval from the participants. Two subthemes, namely the hidden curriculum and implicit discrimination at school, were revised after one academic expert and one teacher indicated that they required greater conceptual differentiation. Based on their recommendations, the hidden curriculum theme was divided into two subcategories: teachers' indirect expectations of female students and the implicit content of textbooks, including images and examples. In addition, one teacher proposed a new subtheme entitled quality of school counseling services, which was added to the model after being approved by the other participants. Ultimately, the final model, comprising 39

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subthemes, including the previous 38 themes and one newly added theme, received final approval from all six participants. The overall agreement rate was estimated at 95.6%, calculated as the ratio of agreements to the total number of assessed items, indicating a high level of credibility for the qualitative findings.

4. Discussion

The present study was conducted to develop a qualitative model of the factors influencing academic competence among female secondary school students through the triangulation of academic experts' perspectives, experienced teachers' accounts, and documentary evidence. The thematic analysis resulted in a multidimensional model comprising four overarching dimensions: individual, educational, family, and social factors. These dimensions were organized into 18 main themes and 39 subthemes, indicating that academic competence is not a unitary attribute or a direct reflection of academic achievement. Rather, it is a dynamic developmental capacity formed through continuous interactions among students' psychological resources, learning behaviors, instructional experiences, family environments, and sociocultural conditions. The central positioning of individual factors in the model showed that participants regarded motivation, self-regulated learning, academic self-efficacy, cognitive abilities, affective-personality characteristics, and mental health as the most proximal determinants of academic competence. At the same time, educational and family factors were conceptualized as intermediate layers that directly shape individual capacities, whereas social factors formed the broader contextual layer through which cultural expectations, peer influences, media exposure, and community resources exerted indirect effects.

One of the most important findings was the central role of self-regulated learning, which received the highest number of codes among all identified themes. Participants repeatedly emphasized planning, goal setting, cognitive and metacognitive strategies, time management, effort regulation, and the organization of the study environment. This finding indicates that academically competent students are not merely those who possess greater intellectual ability; they are students who can intentionally manage their own learning processes. Self-regulation allows learners to translate academic intentions into sustained and organized behavior, monitor their progress, identify weaknesses, and modify ineffective strategies. This interpretation is consistent with evidence showing that self-regulation interventions improve different components of academic competence among secondary school students (Asl-Mohammadalizad et al., 2019). It is also supported by research demonstrating that cognitive-empowerment programs based on executive functions can enhance academic competence among underachieving gifted students by strengthening planning, attention, working memory, and cognitive flexibility (Yavari et al., 2024). Similarly, brain-compatible learning has been shown to improve academic competence by creating instructional conditions aligned with students' cognitive functioning (Khavarzamini et al., 2023). Therefore, the prominence of self-regulated learning in the present model suggests that interventions designed to improve academic competence should explicitly teach students how to plan, monitor, evaluate, and regulate their learning rather than focusing solely on the transmission of subject matter.

Academic motivation was the second most strongly emphasized individual factor, particularly intrinsic motivation, goal orientation, curiosity, enjoyment of learning, and the perceived value of education for the future. This finding suggests that competent academic functioning depends not only on the ability to perform school tasks but also on the willingness to initiate and sustain engagement. Intrinsically motivated students are more likely to approach academic tasks with interest, persist in the face of difficulty, and adopt mastery-oriented strategies. In contrast, excessive dependence on external rewards, grades, approval, or fear of punishment may produce short-term compliance without stable academic engagement. The present result aligns with research identifying academic motivation as a central component in explanatory models of adolescent academic competence (Jafari et al., 2024). It is also consistent with findings indicating that positive and negative academic emotions and school quality of life significantly predict students' academic competence (Bahadori Khosroshahi & Farzanmehr, 2025). These studies support the view that academic competence develops more effectively when students experience learning as meaningful, manageable, and personally valuable. Thus, schools that emphasize only examination outcomes may unintentionally weaken the motivational foundations of competence by replacing curiosity and mastery with fear of failure and performance comparison.

Academic self-efficacy also emerged as a major theme, encompassing students' beliefs in their personal abilities, expectations of success, and persistence after failure. This finding can be explained by the fact that self-efficacy

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influences the selection of tasks, the amount of effort invested, resilience under pressure, and interpretations of academic setbacks. Students who believe they can succeed are more likely to attempt difficult tasks and regard temporary failure as a problem to be solved. In contrast, students with low academic self-efficacy may avoid demanding tasks, disengage rapidly, or interpret mistakes as confirmation of permanent inadequacy. The importance of this theme is consistent with studies showing that perceived self-efficacy predicts academic competence alongside parenting styles and emotion regulation (Mahmoudpour & Darba, 2020). Academic self-efficacy has also been identified as a mediator in the relationships among mindfulness, personality-related characteristics, rumination, teacher–student relationships, and academic competence (Fathi et al., 2024). Furthermore, academic competence has been found to mediate the effects of social support and academic emotions on academic performance and academic vitality (Aghamirli et al., 2022). These findings indicate that academic self-efficacy is both an outcome of supportive educational experiences and a mechanism through which those experiences influence competence.

The findings further showed that cognitive characteristics, including problem-solving ability, critical thinking, and different approaches to learning, were integral to academic competence. Participants described competent students as those who could interpret complex tasks, evaluate information, generate solutions, and adapt their strategies to different academic demands. This result confirms that competence involves the application of knowledge rather than its passive reproduction. The identified importance of problem solving is compatible with research demonstrating that logical-mathematical intelligence training enhances academic competence and academic achievement (Akhsh, 2024). It is also consistent with broader competence frameworks that define academic functioning through the integration of knowledge, practical skills, judgment, and adaptive performance (Perrenet et al., 2017; Van Vucht Tijssen & De Weert, 2023). Research conducted in higher education similarly emphasizes that academic competence includes critical thinking, communication, research capability, and the ability to apply knowledge in changing environments (Boerchi et al., 2021; ChaaCha, 2024). Although these studies were conducted at different educational levels, they support the interpretation that problem solving and critical thinking should be deliberately cultivated during secondary education as foundational competencies for later academic and professional development.

The affective and personality-related dimension included emotional intelligence, academic resilience, intelligence beliefs, test anxiety, depressive symptoms, academic disengagement, and self-esteem. The presence of these themes indicates that academic competence is closely linked to students' ability to regulate emotional reactions to evaluation, interpersonal comparison, and failure. Emotional intelligence may enable students to recognize anxiety, manage frustration, communicate effectively, and seek appropriate support. Academic resilience allows students to recover from low grades, difficult courses, and other educational setbacks. A growth mindset may similarly encourage students to regard ability as improvable through effort and strategy use. These interpretations are supported by evidence that cognitive emotion regulation mediates the relationship between perceived social support and academic competence (Ata Khamenei et al., 2022). The finding is also consistent with research showing that school anxiety is related to social and academic competence through academic self-esteem (Ghaderi Dalir et al., 2024). Moreover, perfectionism can affect social competence through the mediating roles of social anxiety and academic competence (Demirtas-Zorbaz, 2020). Together, these studies indicate that emotional distress may reduce competence by disrupting concentration, persistence, and interpersonal participation, whereas effective emotional regulation protects students' engagement and confidence.

Educational factors constituted the second major layer of the model. Among these, the psychosocial classroom climate, teachers' emotional support, mutual respect, and opportunities for student participation received substantial emphasis. This finding shows that academic competence is developed within a relational environment in which students interpret teachers' behavior as evidence of whether they are respected, capable, and permitted to contribute. Emotional support may reduce fear of mistakes and increase students' willingness to ask questions, communicate uncertainty, and engage in challenging learning activities. The result aligns with evidence that perceived teaching style contributes to academic resilience through academic competence (Afzali & Hosseinian, 2024). It is also consistent with findings showing that teacher and peer support influence academic achievement and vitality through academic competence and academic emotions (Aghamirli et al., 2022). The role of the teacher–student relationship identified in prior structural models further supports the present finding that relational

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quality is not peripheral to competence but one of its formative conditions (Fathi et al., 2024).

Teacher instructional style was another prominent educational theme. Student-centered, active, and participatory instruction was viewed as more supportive of competence than exclusively lecture-based and teacher-dominated methods. Participants also highlighted the value of varied teaching methods and appropriate use of technology. These findings can be explained by the fact that active instruction gives students opportunities to practice decision making, collaboration, inquiry, communication, and self-assessment. In contrast, passive instruction may increase factual recall without developing the capacity to apply knowledge independently. This interpretation is compatible with research showing that pedagogical models contribute significantly to university students' academic competencies when they provide coherent and applied learning experiences (Mendiburu Rojas et al., 2024). It is also supported by evidence that curriculum quality, teacher competence, and educational facilities are associated with academic achievement (Sasia & Handoyo, 2024). Qualitative research on academic and transversal competencies has similarly emphasized that competence development requires learning environments that connect teaching methods with students' lived educational experiences (Sigdel & Acharya, 2023).

Curriculum quality and academic assessment were also identified as important determinants. Participants emphasized the relevance of content to students' needs, an appropriate level of difficulty, logical sequencing, the development of metacognitive skills, varied assessment formats, constructive teacher feedback, and an emphasis on learning rather than grades. These findings suggest that competence is more likely to emerge when curricular expectations are developmentally appropriate and when assessment provides information for improvement rather than functioning merely as a mechanism of ranking. A curriculum that is disconnected from students' lives may weaken task value and intrinsic motivation, while excessively difficult or poorly sequenced content may reduce self-efficacy. The importance of competence-based and quality-assured curricula has been emphasized in academic competence frameworks (Perrenet et al., 2017). Research on modern education also stresses that competence development requires curricula that integrate knowledge, transferable skills, and applied learning opportunities (Toshtemirovich, 2024). The present findings extend this argument to female secondary school students by showing that curriculum and assessment practices influence not only achievement but also students' motivation, confidence, and self-regulatory behavior.

Educational facilities, digital infrastructure, and access to learning resources formed another component of the educational dimension. Participants referred to libraries, laboratories, supplementary materials, internet access, technological equipment, and the physical quality of classrooms. These resources shape whether students can explore academic content, conduct practical activities, access additional explanations, and participate in digitally supported learning. This finding is consistent with evidence that learning facilities contribute to academic outcomes alongside curriculum and teacher competence (Sasia & Handoyo, 2024). Studies of online learning also show that digital education can enhance academic competence when students have adequate access, guidance, and opportunities for interaction (Ahmed et al., 2024). Conversely, the sudden transition to online learning during the COVID-19 lockdown demonstrated that limited support, unequal access, and psychological pressure could undermine students' self-perceived academic competence (Law-van Wyk et al., 2025). Research on formative inquiry in digital contexts likewise indicates that online environments can promote academic competence when learners possess appropriate research and digital skills (Flores-Mamani et al., 2024). Therefore, technology should not be treated as inherently beneficial; its contribution depends on access, instructional design, media literacy, and self-regulation.

The family dimension included parenting style, cultural capital, socioeconomic status, academic support, and parental expectations. Authoritative parenting and active family academic support were particularly prominent. This finding indicates that students are more likely to develop competence when parents combine warmth and encouragement with clear expectations, reasonable supervision, and respect for autonomy. Such parenting may strengthen motivation, self-efficacy, and responsibility, whereas excessive control can increase anxiety and dependence. Permissive or neglectful practices may also reduce competence by failing to provide structure and educational guidance. The result is consistent with evidence that parenting styles, perceived self-efficacy, and emotion regulation jointly predict academic competence (Mahmoudpour & Darba, 2020). It also aligns with models showing that perceived parenting practices influence adolescent academic competence in association with procrastination, self-handicapping, motivation, and

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academic vitality (Jafari et al., 2024). These findings suggest that family interventions should help parents maintain high but realistic expectations while supporting students' autonomy and problem-solving capacity.

Family academic support included monitoring assignments and examinations, assisting with academic problems, providing a quiet study environment, and encouraging achievement. The importance of this theme is supported by research showing that academic support mediates the relationship between academic competence and academic disengagement among female students (Omidi Cheshmeh-Kaboud et al., 2022). This means that even students with adequate competence may become disengaged when support systems are weak or when they perceive that their educational efforts are not recognized. Family cultural capital, including parental education, access to books and computers, and family reading habits, may similarly shape students' language skills, academic expectations, familiarity with school culture, and access to learning opportunities. Socioeconomic resources can facilitate tutoring, supplementary classes, digital access, and stable study conditions; however, their effects are likely mediated by how resources are used and by the emotional climate of the family.

The social dimension showed that peer culture, gender stereotypes, media and cyberspace, and community social capital shape academic competence within the broader environment. Peer culture can support achievement by normalizing effort, collaboration, and educational aspirations, but it can also discourage engagement through negative pressure or fear of social rejection. The role of peer support identified in previous research is consistent with this finding (Aghamirli et al., 2022). The present study also highlighted gender stereotypes and implicit discrimination as culturally important factors affecting female students. Traditional assumptions about women's social roles may restrict educational aspirations, influence subject choices, or reduce the recognition of girls' competence. This result aligns with evidence that women's stronger high-school performance does not necessarily translate into equivalent university outcomes because of competitive climates, discrimination, and institutional conditions (Galos, 2024). Accordingly, academic competence cannot be understood exclusively through students' personal attributes; it is also affected by whether educational and social systems provide equal opportunities for competence to be expressed and rewarded.

The triangulation findings strengthened the credibility of the model. Self-regulated learning, intrinsic motivation, academic self-efficacy, authoritative parenting, family academic support, and the psychosocial classroom climate were identified across expert interviews, teacher interviews, and written sources. Their convergence suggests that these themes represent stable and central determinants rather than interpretations limited to a single stakeholder group. At the same time, source-specific themes added depth to the model. Experts emphasized theoretical constructs such as emotional intelligence, whereas teachers highlighted classroom-based phenomena such as the hidden curriculum. Documentary sources drew greater attention to implicit discrimination. This pattern demonstrates the methodological value of triangulation because no single source could fully represent the psychological, practical, institutional, and cultural dimensions of academic competence. The high level of agreement obtained through member checking further showed that the final themes and relationships adequately reflected participants' perspectives.

5. Conclusion

Overall, the proposed model extends previous research by integrating factors that have often been examined separately. Earlier studies have established relationships between competence and self-regulation, emotional processes, teaching styles, parenting, support, curriculum, digital learning, and professional or academic performance (Abdollahi & Taabodi, 2019; Drozdova & Ţaulean, 2022; Guo et al., 2021; Heydari et al., 2019; Santi & Solvera, 2024; Sunaiyah et al., 2022). The present findings suggest that these variables should be interpreted as components of an interconnected system. Individual capacities form the immediate psychological basis of competence, but they are developed and reinforced through educational and family experiences and are further conditioned by social and cultural structures. Consequently, efforts to improve academic competence are unlikely to be effective when they target only one dimension. A comprehensive approach must simultaneously strengthen students' self-regulatory and emotional skills, improve classroom relationships and instructional practices, engage families, and address sociocultural barriers affecting female students.

6. Limitations & Suggestions

This study had several limitations that should be considered when interpreting its findings. The participants

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were drawn from universities and female upper-secondary schools in Arak, and the contextual characteristics of this city may limit the transferability of the findings to other provinces, rural areas, culturally diverse communities, or educational systems. Although academic experts, experienced teachers, and documentary sources were included, female students and their parents were not directly interviewed, and their perspectives may have revealed additional dimensions or different interpretations of academic competence. The use of snowball sampling for experts may also have resulted in the recruitment of participants from overlapping professional networks. Furthermore, the frequency of codes was used to indicate emphasis within the data, but code frequency does not necessarily represent the objective importance or causal strength of a factor. Finally, despite triangulation, member checking, and systematic coding, qualitative interpretation remains partly dependent on the researchers' analytical judgments.

Future studies should examine the proposed model in different geographical, cultural, and educational contexts and include female students, parents, school counselors, principals, and educational policymakers as additional sources of data. Quantitative studies could develop and validate an instrument based on the identified dimensions and test the structural relationships among individual, educational, family, and social factors. Longitudinal research would be valuable for determining how academic competence develops across different stages of adolescence and how changes in motivation, self-regulation, family support, and school climate influence later educational outcomes. Comparative research could also investigate differences between female and male students, public and private schools, high- and low-resource communities, and different academic disciplines. Mixed-method intervention studies are recommended to evaluate whether multilevel programs based on the proposed model produce sustained improvements in academic competence, academic engagement, well-being, and achievement.

Schools should adopt a comprehensive competence-development approach that combines student training, teacher professional development, family education, and institutional reform. Students should receive explicit instruction in goal setting, time management, cognitive and metacognitive learning strategies, emotion regulation, problem solving, critical thinking, and adaptive responses to academic failure. Teachers should be trained to use student-centered methods, provide emotionally supportive and autonomy-promoting feedback, reduce excessive emphasis on grades, and create psychologically safe classrooms in which students can participate without fear of humiliation. Parents should be guided to establish realistic expectations, provide structured academic support, and avoid controlling or gender-biased practices. Schools should also strengthen counseling services, improve digital and physical learning resources, monitor bullying and implicit discrimination, promote healthy peer cultures, and ensure that curricular content and institutional practices communicate equal academic expectations and opportunities for female students.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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All authors equally contributed to this article.

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