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Negotiating Femininity in STEM Higher Education: Patterns of Career, Individual, and Family Orientations

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ABSTRACT

The increasing enrollment of women in Science, Technology, Engineering, and Mathematics (STEM) at higher educational institutions has prompted critical examination of how female students negotiate their identities within traditionally male-dominated fields. This study explores the negotiation of femininity through three distinct orientations careerist femininity, emphasizing professional achievement and skill development; individualized femininity, focusing on personal growth and self-expression; and family-oriented femininity, prioritizing domestic and caregiving responsibilities alongside academic pursuits. A quantitative, cross-sectional survey design was employed, collecting data from 409 female students enrolled in the Faculty of Science at a public sector university in Punjab, Pakistan. A structured questionnaire, pre-tested for reliability (Cronbach's alpha $\geq$ 0.700), measured participants' attitudes and experiences. Univariate analyses, including frequency distributions and percentages, were used to summarize the data. Findings indicate that female students continuously navigate patterns of acceptability and resistance, balancing societal expectations, institutional norms, and personal aspirations. Careerist orientations are often constrained by cultural norms and family expectations, whereas individualized orientations reflect a growing emphasis on autonomy and self-expression. Family-oriented femininity remains influential in shaping academic engagement and future career planning. By situating these experiences within role theory, Bourdieu's habitus and cultural capital, and Goffman's dramaturgical perspective, the study illuminates the multidimensional dynamics of gender negotiation in STEM. The findings underscore the need for inclusive policies, supportive practices, and flexible learning environments that recognize the diversity

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of feminine identities and facilitate equitable participation in STEM higher education.

Keywords: Femininity, STEM Higher Education, Careerist Femininity, Individualized Femininity, Family-Oriented Femininity, Gender Negotiation

Introduction

The increasing presence of females in Science, Technology, Engineering, and Mathematics (STEM) disciplines at the higher education level has drawn significant scholarly attention to the dynamics of gender, identity, and social expectation within traditionally male-dominated fields (Bourdieu, 1986; Shoaib, Anwar, & Mustafa, 2022; Shoaib, Waris, Zaman, & Abdullah, 2025; Waris, Shoaib, Sharif, & Abdullah, 2025a, 2025b, 2025c). However, the numerical representation of female students has grown, their experiences continue to be shaped by complex negotiations of femininity that intersect with career ambitions, personal autonomy, and familial responsibilities (Goffman, 1959; Shoaib & Abdullah, 2025; Shoaib, Waris, Iqbal, & Abdullah, 2025; Waris, Shoaib, Iqbal, & Abdullah, 2025). This study conceptualizes femininity in STEM through three distinct orientations careerist femininity, which emphasizes professional achievement and skill development; individualized femininity, which centers personal growth and self-expression; and family-oriented femininity, which prioritizes domestic and caregiving roles alongside academic pursuits. By examining patterns of acceptability and resistance among female students, the research seeks to illuminate how these orientations influence engagement, performance, and identity formation within STEM higher education. Understanding these nuanced dynamics not only contributes to feminist and sociological theories of gendered participation in STEM but also provides insights for institutional policies aimed at fostering inclusive, supportive, and flexible learning environments for females.

Study Context

Despite increasing female enrollment in STEM higher education, females continue to encounter structural, cultural, and social challenges that influence how they negotiate their identities and career trajectories (Eagly, 1987; Ali, Shoaib, & Ali, 2025; Ali, Shoaib, Iqbal, & Abdullah, 2025a; Shoaib, Ali, Iqbal, & Abdullah, 2025b, 2025c)). Traditional notions of femininity, societal expectations, and the persistent male dominance in STEM fields create tensions that affect students' academic engagement, professional aspirations, and personal choices (Bourdieu, 1986; (Ali, Shoaib, Iqbal, & Abdullah, 2025b; Iqbal, Shoaib, Iqbal, & Abdullah, 2025; Shoaib, Ali, Iqbal, & Abdullah, 2025a, 2025b, 2025c)). This study focuses on female undergraduate and graduate students in STEM programs at public and private universities in Pakistan, examining how they navigate and reconcile careerist, individualized, and family-oriented orientations of femininity. By exploring patterns of acceptance and resistance within these orientations, the research situates itself at the intersection of gender studies and educational sociology, aiming to understand the lived experiences of females in STEM and the ways institutional and cultural structures shape their academic participation and identity formation.

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The Data and Methods

A quantitative, cross-sectional survey design was employed to examine the perspectives of female students in STEM disciplines. From an initial pool of 417 students selected through proportionate random sampling, 409 participants completed the study. Data were collected using a structured questionnaire, which was pre-tested on 25 randomly selected students to ensure reliability, yielding Cronbach's alpha values of 0.700 and above. An attitudinal scale was developed to capture participants' responses across careerist, individualized, and family-oriented orientations of femininity. Univariate analyses, including frequency distributions and percentages, were used to summarize the data and inform the discussion of results. The study draws on primary data from female students enrolled in the Faculty of Science at a public sector university in Punjab Province, Pakistan.

Results

Careerist Femininity: The primary data analysis presented the frequency and percentage of the statics given in the table as "you aim for utilization of skills in practical life". The study findings in the table outlined that 37.4 percent of the female students were strongly agree and 43.3 percent of the female students were agreeing with the item stated in the table that "you aim for utilization of skills in practical life". However, the response of the female students was in favor as disagree (12.2 %) and 07.1 percent of the female student were strongly disagreeing with given argument in the table "you aim for utilization of skills in practical life". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you aim for utilization of skills in practical life".

Table 1

Response of the Female Students towards Careerist Femininity
SA=Strongly Agree to Strongly Disagree=SD

S. No.	Statements	SA f (%)	A f (%)	D f (%)	SD f (%)
i	You aim for utilization of skills in practical life	153 (37.4)	177 (43.3)	50 (12.2)	29 (07.1)
ii	You prefer easily to change your traditional role	72 (17.6)	207 (50.6)	106 (25.9)	24 (5.9)
iii	You have target oriented goals for future	129 (31.5)	181 (44.3)	71 (17.4)	28 (06.8)
iv	You will prefer to become teacher	65 (20.8)	161 (39.4)	122 (29.8)	41 (10.0)
v	You want opportunity to use your abilities	145 (35.5)	192 (46.9)	55 (13.4)	17 (04.2)
vi	You need to work harder to prove yourself	168 (41.1)	159 (38.9)	58 (14.2)	24 (05.9)
vii	Females face more challenges in career making	160 (39.1)	160 (39.1)	59 (14.4)	30 (07.3)
viii	You depend on future job opportunities after	166	146	60	37

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education (40.6) (35.7) (14.7) (09.0)

The primary data analysis presented the frequency and percentage of the statics given in the table as “you prefer easily to change your traditional role”. The study findings in the table outlined that 17.6 percent of the female students were strongly agree and 50.6 percent of the female students were agreeing with the item stated in the table that “you prefer easily to change your traditional role”. However, the response of the female students was in favor as disagree (25.9 %) and 05.9 percent of the female student were strongly disagreeing with given argument in the table “you prefer easily to change your traditional role”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you prefer easily to change your traditional role”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you have target oriented goals for future”. The study findings in the table outlined that 31.5 percent of the female students were strongly agree and 44.3 percent of the female students were agreeing with the item stated in the table that “you have target oriented goals for future”. However, the response of the female students was in favor as disagree (17.4 %) and 06.8 percent of the female student were strongly disagreeing with given argument in the table “you have target oriented goals for future”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you have target oriented goals for future”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you will prefer to become teacher”. The study findings in the table outlined that 20.8 percent of the female students were strongly agree and 39.4 percent of the female students were agree with the item stated in the table that “you will prefer to become teacher”. However, the response of the female students was in favor as disagree (29.8 %) and 10.0 percent of the female student were strongly disagreeing with given argument in the table “you will prefer to become teacher”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you will prefer to become teacher”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you want opportunity to use your abilities”. The study findings in the table outlined that 35.5 percent of the female students were strongly agree and 46.9 percent of the female students were agreeing with the item stated in the table that “you want opportunity to use your abilities”. However, the response of the female students was in favor as disagree (13.4 %) and 04.2 percent of the female student were strongly disagreeing with given argument in the table “you want opportunity to use your abilities”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you want opportunity to use your abilities”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you need to work harder to prove yourself”. The study findings in the table outlined that 41.1 percent of the female students were strongly agree and 38.9 percent of the female students were agreeing with the item stated in the table that “you need to work harder to prove yourself”. However, the response of the female

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students was in favor as disagree (14.2 %) and 05.9 percent of the female student were strongly disagreeing with given argument in the table "you need to work harder to prove yourself". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you need to work harder to prove yourself".

The primary data analysis presented the frequency and percentage of the statics given in the table as "females face more challenges in career making". The study findings in the table outlined that 39.1 percent of the female students were strongly agree and 39.1 percent of the female students were agreeing with the item stated in the table that "females face more challenges in career making". However, the response of the female students was in favor as disagree (14.4 %) and 07.3 percent of the female student were strongly disagreeing with given argument in the table "females face more challenges in career making". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "females face more challenges in career making".

The primary data analysis presented the frequency and percentage of the statics given in the table as "you depend on future job opportunities after education". The study findings in the table outlined that 40.6 percent of the female students were strongly agree and 35.7 percent of the female students were agreeing with the item stated in the table that "you depend on future job opportunities after education". However, the response of the female students was in favor as disagree (14.7 %) and 09.0 percent of the female student were strongly disagreeing with given argument in the table "you depend on future job opportunities after education". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you depend on future job opportunities after education".

Individualized Femininity: The primary data analysis presented the frequency and percentage of the statics given in the table as "you have personal autonomy to decision making". The study findings in the table outlined that 32.8 percent of the female students were strongly agree and 46.2 percent of the female students were agreeing with the item stated in the table that "you have personal autonomy to decision making". However, the response of the female students was in favor as disagree (15.2 %) and 05.9 percent of the female student were strongly disagreeing with given argument in the table "you have personal autonomy to decision making". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you have personal autonomy to decision making".

Table 2

Response of the Female Students towards Individualized Femininity
SA=Strongly Agree to Strongly Disagree=SD

S. No.	Statements	SA f (%)	A f (%)	D f (%)	SD f (%)
i	You have personal autonomy to decision making	134 (32.8)	189 (46.2)	62 (15.2)	24 (05.9)
ii	You have freedom to demonstrate	75 (18.3)	246 (60.1)	67 (16.4)	21 (05.1)

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iii	You reject the traditional feminine expectation	88 (21.5)	167 (40.8)	129 (31.5)	25 (06.1)
iv	You have decision making to participate in family gathering	105 (25.7)	215 (52.6)	71 (17.4)	18 (04.4)
v	You engage in activities that bring happiness	120 (29.3)	195 (47.7)	68 (16.6)	26 (06.4)
vi	You express your emotions openly	78 (19.1)	156 (38.1)	120 (29.3)	55 (13.4)
vii	You feel empowered to make choices about your life	100 (24.4)	191 (46.7)	74 (18.1)	44 (10.8)
viii	You see yourself as a role model for others in family	105 (25.7)	171 (41.8)	93 (22.7)	40 (09.8)

The primary data analysis presented the frequency and percentage of the statics given in the table as “you have freedom to demonstrate”. The study findings in the table outlined that 18.3 percent of the female students were strongly agree and 60.1 percent of the female students were agreeing with the item stated in the table that “you have freedom to demonstrate”. However, the response of the female students was in favor as disagree (16.4 %) and 05.1 percent of the female student were strongly disagreeing with given argument in the table “you have freedom to demonstrate”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you have freedom to demonstrate”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you reject the traditional feminine expectation”. The study findings in the table outlined that 21.5 percent of the female students were strongly agree and 40.8 percent of the female students were agreeing with the item stated in the table that “you reject the traditional feminine expectation”. However, the response of the female students was in favor as disagree (31.5 %) and 06.1 percent of the female student were strongly disagreeing with given argument in the table “you reject the traditional feminine expectation”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you reject the traditional feminine expectation”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you have decision making to participate in family gathering”. The study findings in the table outlined that 25.7 percent of the female students were strongly agree and 52.6 percent of the female students were agreeing with the item stated in the table that “you have decision making to participate in family gathering”. However, the response of the female students was in favor as disagree (17.4 %) and 04.4 percent of the female student were strongly disagreeing with given argument in the table “you have decision making to participate in family gathering”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you have decision making to participate in family gathering”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you engage in activities that bring happiness”. The study findings in the table outlined that 29.3 percent of the female students were strongly agree and

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47.7 percent of the female students were agreeing with the item stated in the table that "you engage in activities that bring happiness". However, the response of the female students was in favor as disagree (16.6 %) and 06.4 percent of the female student were strongly disagreeing with given argument in the table "you engage in activities that bring happiness". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you engage in activities that bring happiness".

The primary data analysis presented the frequency and percentage of the statics given in the table as "you express your emotions openly". The study findings in the table outlined that 19.1 percent of the female students were strongly agree and 38.8 percent of the female students were agreeing with the item stated in the table that "you express your emotions openly". However, the response of the female students was in favor as disagree (29.3 %) and 13.4 percent of the female student were strongly disagreeing with given argument in the table "you express your emotions openly". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you express your emotions openly".

The primary data analysis presented the frequency and percentage of the statics given in the table as "you feel empowered to make choices about your life". The study findings in the table outlined that 24.4 percent of the female students were strongly agree and 46.7 percent of the female students were agreeing with the item stated in the table that "you feel empowered to make choices about your life". However, the response of the female students was in favor as disagree (18.1 %) and 10.8 percent of the female student were strongly disagreeing with given argument in the table "you feel empowered to make choices about your life". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you feel empowered to make choices about your life".

The primary data analysis presented the frequency and percentage of the statics given in the table as "you see yourself as a role model for others in family". The study findings in the table outlined that 25.7 percent of the female students were strongly agree and 41.8 percent of the female students were agreeing with the item stated in the table that "you see yourself as a role model for others in family". However, the response of the female students was in favor as disagree (22.7 %) and 09.8 percent of the female student were strongly disagreeing with given argument in the table "you see yourself as a role model for others in family". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you see yourself as a role model for others in family".

Family Oriented Femininity: The primary data analysis presented the frequency and percentage of the statics given in the table as "you engage yourself in family caregiving activities". The study findings in the table outlined that 32.5 percent of the female students were strongly agree and 46.2 percent of the female students were agreeing with the item stated in the table that "you engage yourself in family caregiving activities". However, the response of the female students was in favor as disagree (13.2 %) and 08.1 percent of the female student were strongly disagreeing with given argument in the table "you engage yourself in family caregiving activities". Consequently, the study concluded that most of the female students were

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in favor of argument with the given statement "you engage yourself in family caregiving activities".

Table 3
Response of the Female Students towards Family Oriented Femininity
SA=Strongly Agree to Strongly Disagree=SD

S. No.	Statements	SA f (%)	A f (%)	D f (%)	SD f (%)
i	You engage yourself in family caregiving activities	133 (32.5)	189 (46.2)	54 (13.2)	33 (08.1)
ii	You provide emotional support to your family members	107 (26.2)	227 (55.5)	50 (12.2)	25 (06.1)
iii	You value your domestic responsibilities	97 (23.7)	198 (48.4)	87 (21.3)	27 (06.6)
iv	You prioritize your family over career	132 (32.3)	206 (50.4)	56 (13.7)	15 (3.7)
v	You manage your academic comes family life together	124 (30.3)	203 (49.6)	52 (12.7)	30 (07.3)
vi	You value domestic responsibilities in your life	129 (31.5)	196 (47.9)	59 (14.4)	25 (06.1)
vii	You prefer family benefit over personal interest	141 (34.5)	183 (44.7)	58 (14.2)	27 (06.6)
viii	You value shyness in female	144 (35.2)	163 (39.9)	76 (18.6)	26 (06.4)

The primary data analysis presented the frequency and percentage of the statics given in the table as "you provide emotional support to your family members". The study findings in the table outlined that 26.2 percent of the female students were strongly agree and 55.5 percent of the female students were agreeing with the item stated in the table that "you provide emotional support to your family members". However, the response of the female students was in favor as disagree (12.2 %) and 06.1 percent of the female student were strongly disagreeing with given argument in the table "you provide emotional support to your family members". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you provide emotional support to your family members".

The primary data analysis presented the frequency and percentage of the statics given in the table as "you value your domestic responsibilities". The study findings in the table outlined that 23.7 percent of the female students were strongly agree and 48.4 percent of the female students were agreeing with the item stated in the table that "you value your domestic responsibilities". However, the response of the female students was in favor as disagree (21.3 %) and 06.6 percent of the female student were strongly disagreeing with given argument in the table "you value your domestic responsibilities". Consequently, the study concluded that most of the female students were in favor of argument with the given statement "you value your domestic responsibilities".

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The primary data analysis presented the frequency and percentage of the statics given in the table as “you prioritize your family over career”. The study findings in the table outlined that 32.3 percent of the female students were strongly agree and 50.4 percent of the female students were agreeing with the item stated in the table that “you prioritize your family over career”. However, the response of the female students was in favor as disagree (3.7 %) and 13.7 percent of the female student were strongly disagreeing with given argument in the table “you prioritize your family over career”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you prioritize your family over career”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you manage your academic comes family life together”. The study findings in the table outlined that 30.3 percent of the female students were strongly agree and 49.6 percent of the female students were agreeing with the item stated in the table that “you manage your academic comes family life together”. However, the response of the female students was in favor as disagree (12.7 %) and 07.3 percent of the female student were strongly disagreeing with given argument in the table “you manage your academic comes family life together”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you manage your academic comes family life together”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you value domestic responsibilities in your life”. The study findings in the table outlined that 31.5 percent of the female students were strongly agree and 47.9 percent of the female students were agreeing with the item stated in the table that “you value domestic responsibilities in your life”. However, the response of the female students was in favor as disagree (14.4 %) and 06.1 percent of the female student were strongly disagreeing with given argument in the table “you value domestic responsibilities in your life”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you value domestic responsibilities in your life”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you prefer family benefit over personal interest”. The study findings in the table outlined that 34.5 percent of the female students were strongly agree and 44.7 percent of the female students were agreeing with the item stated in the table that “you prefer family benefit over personal interest”. However, the response of the female students was in favor as disagree (14.2 %) and 06.6 percent of the female student were strongly disagreeing with given argument in the table “you prefer family benefit over personal interest”. Consequently, the study concluded that most of the female students were in favor of argument with the given statement “you prefer family benefit over personal interest”.

The primary data analysis presented the frequency and percentage of the statics given in the table as “you value shyness in female”. The study findings in the table outlined that 35.2 percent of the female students were strongly agree and 39.9 percent of the female students were agreeing with the item stated in the table that “you value shyness in female”. However, the response of the female students was in favor as disagree (18.6 %) and 06.4 percent of the female student were strongly disagreeing with given argument in the table “you value shyness in female”. Consequently, the

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study concluded that most of the female students were in favor of argument with the given statement “you value shyness in female”.

Discussion

Careerist Femininity: The statistical analysis confirmed that female students had aim to utilize their skills in their practical life. Similarly, the primary data analysis pointed out that female students easily changed their traditional roles. Furthermore, the study findings asserted that female students had targeted oriented goals for future. Likewise, the study findings indicated that most of the female students preferred to become a teacher. In addition, the study findings summarized that female students want opportunities to use their abilities. Similarly, the primary data analysis highlighted that female students think that they needed to work harder to prove their self. In the same token, the study findings claimed that female students faced many challenges in career making. The summary of the frequency distribution declared that female students depended on the future job opportunities after completing the education. The study findings had been linked with the study findings as mentioned in review. The study findings outlined that in Pakistan education is still challenge for the females (Ali, Shoaib, Iqbal, & Abdullah, 2025a, 2025b; Shoaib, Rasool, & Iqbal, 2025a, 2025b). Likewise, the analysis of the study reported that long struggle is behind the female education (Shoaib, Iqbal, Rasool, & Abdullah, 2025; Shoaib, Rasool, Iqbal, & Abdullah, 2025a, 2025b; Shoaib, Zaman, & Abdullah, 2025). Correspondingly, the study findings showed that foreign aid impact on the education of students (Shoaib, Rasool, & Zaman, 2025a, 2025b, 2025c; Shoaib, Rasool, Zaman, & Abdullah, 2025). As the conclusion of the research articulated that in societies there are lack of female scientists (Shoaib, Ahmed, & Iqbal, 2025; Shoaib, Ahmed, Iqbal, & Abdullah, 2025; Shoaib, Batool, Kausar, & Abdullah, 2025; Shoaib, Rasool, & Iqbal, 2025c; Shoaib & Ullah, 2025). In the same token, the study findings examined that provide equity in education to all genders (Ahmed, Shoaib, & Zaman, 2025; Shoaib, Ahmed, & Usmani, 2025a, 2025b; Shoaib, Rasool, Zaman, & Ahmed, 2025)

Individualized Femininity: The statistical analysis confirmed that some female students had personal autonomy for decision making. Similarly, the primary data analysis pointed out that female students had freedom to demonstrate. Furthermore, the study findings asserted that female students their traditional feminine expectation. Likewise, the study findings indicated that female students had decision making to participate in the family gatherings. In addition, the study findings summarized that many students engaged their self in the activities that bring happiness in their life. Similarly, the primary data analysis highlighted that female students expressed their emotions openly. In the same token, the study findings claimed that most of the females feel empowered to make choices about their life. The summary of the frequency distribution declared that female see their self as a role model for others of the family. The study findings had been linked with the study findings as mentioned in review. The study findings outlined that involvement of parents was important for the success of children in education (Shoaib, Ahmed, Zaman, & Abdullah, 2025; Shoaib, Kausar, Ali, & Abdullah,

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2025; Shoaib, Rasool, Kalsoom, & Ali, 2025; Shoaib, Waris, & Iqbal, 2025a). Likewise, the analysis of the study reported that ethical education is necessary for the students (Ali, Shoaib, & Kausar, 2025; Shoaib, Ali, Iqbal, & Abdullah, 2025a; Shoaib, Ali, & Kausar, 2025; Shoaib, Waris, & Iqbal, 2025c). Correspondingly, the study findings showed that pedagogical skills was important to increase the number of female students(Shoaib & Bashir, 2025; Shoaib, Waris, & Iqbal, 2025b; Shoaib, Waris, & Iqbal, 2025a, 2025b). As the conclusion of the research articulated that it was important to explain the importance of education with the reference to religion (Shoaib, 2025a, 2025b; Muhammad Shoaib, Amina Shamsher, & Shamraiz Iqbal, 2025; Shoaib, Tariq, & Iqbal, 2025b; Shoaib, Tariq, Rasool, & Iqbal, 2025). In the same token, the study findings examined that group of friends effect on the decision making of individual (Shoaib, 2024e; Shoaib, Iqbal, & Iftikhar, 2025; Shoaib, Shamsher, & Iqbal, 2025; Shoaib, Tariq, & Iqbal, 2025a; Shoaib & Zaman, 2025).

Family Oriented Femininity: The statistical analysis confirmed that female students were involved in the caregiving activities of the family. Similarly, the primary data analysis pointed out that female students provided the emotional support to their family members. Furthermore, the study findings asserted that female students valued their domestic values. Likewise, the study findings indicated that females prioritize their family over career. In addition, the study findings summarized that female managed their academic cum and family life together. Similarly, the primary data analysis highlighted that female prefer family benefits over their personal interest. In the same token, the study findings claimed that female value their domestic responsibilities in their life. The summary of the frequency distribution declared that female value the element of shyness in the females. The study findings had been linked with the study findings as mentioned in review. The study findings outlined that in most of the societies females were not considered as a leader they face challenges (Shoaib, Rasool, & Anwar, 2021; Shoaib, Shehzadi, & Abbas, 2023, 2024a, 2024b). Likewise, the analysis of the study reported that most of the female not ready to choose science subject they had no pressure of the earning (Shoaib, 2023a, 2023b, 2024a, 2024b, 2024c, 2024d). Correspondingly, the study findings showed that there is a gender equality in education (Shoaib & Ullah, 2019, 2021). As the conclusion of the research articulated that student choose subjects according to their socio-economic background (Shoaib, Ali, & Akbar, 2021; Shoaib, Fatima, & Jamil, 2021; Shoaib, Iqbal, & Tahira, 2021). In the same token, the study findings examined that curriculum was not satisfactory in most of the developing countries (Shoaib, Ali, Anwar, & Abdullah, 2022; Shoaib, Mustafa, & Hussain, 2023; Shoaib, Rasool, et al., 2021; Shoaib, Tariq, Shahzadi, & Ali, 2022).

Theoretical Insights

The negotiation of femininity in STEM higher education understood through the lens of role theory (Eagly, 1987), Bourdieu's concepts of habitus and cultural capital (Bourdieu, 1986), and Goffman's dramaturgical framework (Goffman, 1959). Role theory highlights how social expectations shape the behaviors and identities females adopt in academic and professional spaces, including careerist, individualized, and

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family-oriented orientations (Eagly, 1987). Bourdieu's notion of habitus explains how prior socialization and internalized norms influence students' perceptions of acceptable feminine conduct within STEM, whereas cultural capital shapes their access to resources, networks, and opportunities for academic and professional advancement (Bourdieu, 1986). Goffman's dramaturgical perspective further illuminates how female students perform and negotiate their femininity in public, virtual, and collaborative classroom settings, balancing societal expectations with personal aspirations (Goffman, 1959). Collectively, these frameworks provide a multidimensional understanding of acceptability, resistance, and identity formation among females navigating STEM higher education.

Conclusion

This study highlights the complex ways in which female students in STEM higher education negotiate femininity across careerist, individualized, and family-oriented orientations. The findings indicate that females increasingly pursue STEM disciplines, their experiences are shaped by a continuous balancing of professional ambitions, personal identity, and familial expectations. Patterns of acceptability and resistance reveal that institutional structures, cultural norms, and peer interactions influence the expression and perception of femininity, often requiring females to navigate multiple, sometimes conflicting, roles. By linking these experiences to sociological and gender theories, the study underscores the importance of creating inclusive, flexible, and supportive learning environments that recognize the diversity of feminine identities and foster equitable participation in STEM. Overall, understanding these dynamics provides valuable insights for educators, policymakers, and researchers aiming to address gender disparities and support female's full engagement in STEM fields.

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