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Exploring the Antecedents of Urban Female Entrepreneurial Activity: The Moderating Role of Self-efficacy, Family Support, and Financial Literacy

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Abstract

Female entrepreneurs in developed and developing countries contribute significantly in generating household income. Despite this, they have several disadvantages compared to their male counterparts. They have to cope with the cultural and other barriers common in developing countries. Given these, we have developed a conceptual framework with one dependent variable (female entrepreneurship). Four predictors (i.e., Personal traits, institutional environment, government and NGOs assistance, and perceived access to finance) and three moderators (i.e., self-efficacy, family support, and financial literacy). We collected the data using a pre-developed questionnaire adopted from past studies. The target population for this study was female entrepreneurs in urban cities. The study sample size was 325, and we collected data both in person and online. The study used Smart PLS for data analysis. All the articulated hypotheses were approved. We accepted Hypothesis 1: "Personal support positively affects female entrepreneurial activity."

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The results support Hypothesis 2: "Institutional environment positively affects female entrepreneurial activity. The results support Hypothesis 3: "Government NGO assistance positively affects female entrepreneurial activity, We accepted Hypothesis 4: "Perceived access to finance positively affects female entrepreneurial activity. The results support Hypothesis 5: "Self-efficacy moderates the relationship between personal traits and female entrepreneurial activity. The results support Hypothesis 6: "Financial support moderates the relationship between personal traits and female entrepreneurial activity. We accepted Hypothesis 7: "Financial literacy moderates the relationship between Government and NGO assistance and female entrepreneurial activity.

Keywords: *Female entrepreneurial activity, personality traits, institutional environment, government and NGO's assistance, self-efficacy, family support, and financial literacy.*

Introduction

Female entrepreneurs significantly contribute to job creation and increased household incomes; as a result, they promote inclusive growth (OECD, 2022). According to a World Bank report, female entrepreneurs serve as a pathway for women's economic empowerment and financial independence (UN Women, 2020). Many studies have found that, despite their importance, women entrepreneurs' activities are lower than those of men in both developed and developing economies. There are many reasons for this disparity, including social and cultural barriers, as well as structural and institutional factors (International Labor Organization, 2019).

Past studies document that women in developing countries often face challenges, including restricted mobility, lower levels of education and financial literacy, and limited access to financial resources (Demirgüç-Kunt et al., 2018). Moreover, women in developing countries are unable to start new businesses because of cultural norms and gender biases. Given these challenges, we believe there is a need to examine the key antecedents influencing entrepreneurial activity. Bandura (1997) believes that a supportive culture is essential for encouraging women to engage in entrepreneurship. Researchers believe a supportive environment includes infrastructure, regulatory framework, and economic conditions. All these are necessary to motivate and guide female entrepreneurs. Thus, we argue that providing a favorable environment can reduce barriers and create conditions that enable women to pursue business ventures more effectively. Moreover, researchers have found that not-for-profit organizations (NGOs) also promote female entrepreneurs in developing countries. NGOs in developing countries provide mentorship, environmental opportunities, and training. Thus, we argue that NGOs in developing countries play a critical role, especially for women. Additionally, researchers argue that other factors, such as limited access to credit, lack

of collateral, and financial exclusion, hinder business growth.

Furthermore, researchers believe that external-level characteristics and personal traits positively affect entrepreneurial behavior (Bandura, 1997). For example, self-efficacy has varying effects on the institutional environment and on female entrepreneurship. Self-efficacy is an individual's belief in their ability to perform a task and achieve their goals. It is an important determinant for entrepreneurial intention and success. (Joseph Schumpeter, 1934). How a woman identifies opportunities and responds to challenges also depends on personal traits, such as risk-taking ability, innovativeness, and resilience. We also believe that understanding the interaction between internal and external factors may help in understanding entrepreneurial outcomes. For example, financial literacy may help women understand and manage their financial resources (OECD, 2020).

Given the above discussions, the study formulated the following objectives:

1. To ascertain the "impact of personal traits, institutional environment, government and NGOs' assistance, and perceived access to finance on female entrepreneurial activity."
2. To examine the impact of institutional environment on female entrepreneurial activity.
3. To examine the "moderating role of government NGO assistance on the relationship between personal traits and female entrepreneurial activity."
4. To examine the "moderating role of perceive access to finance on the relationship between personal traits and female entrepreneurial activity."
5. To examine the moderating affect of self-efficacy between institutional environment and female entrepreneur activity.
6. To examine moderating impact of family support between personal trits and female entrepreneur activity.
7. To examine the moderating impact of financial literacy between government of NGO assistance and female entrepreneur activity.

Literature Review

Hypothesis Development

Personal Traits and Female Entrepreneurial Activity

Personal traits significantly affect individuals' attitudes and behavior, including female entrepreneurial activity. Researchers believe it also motivates individuals in

decision-making and enables them to manage business challenges (Cao et al., 2022). Moreover, researchers believe that some key drivers of entrepreneurial behavior include proactivity, risk-taking, and an internal locus of control (Cao et al., 2022). Furthermore, these discussed characteristics help women identify and mobilize resources and business opportunities. As a result, the women are able to start and continue their businesses despite socioeconomic barriers (Jalil et al., 2023). Additionally, researchers believe that traits such as self-confidence, resilience, and self-efficacy are important for women entrepreneurs in developing countries, especially in cultures where cultural and structural constraints limit participation (Feng et al., 2023). Moreover, researchers have noted that psychological factors, particularly self-confidence and resilience, significantly promote women's entrepreneurship in developing economies, where they must cope with structural and cultural constraints (Jalil et al., 2023).

H1: Personal Traits “positively affect female entrepreneurial activity.”

Institutional Environment Female Entrepreneurial Activity

Many antecedents affect female entrepreneurship, but one important one is institutional environment (Elam et al., 2021). Yousafzai et al. (2022) argue that cultural norms and social expectations are antecedents of the institutional environment, which directly and indirectly affect female entrepreneurship. Recent studies have endorsed that “a supportive institutional environment positively influences female entrepreneurial activity” (McAam et al., 2022). Based on these findings, we argue that institutional quality reduces gender gaps in entrepreneurship.

Similarly, many studies argue that the institutional environment is critical in shaping women's entrepreneurship and creating venture capital. This is more relevant in emerging economies because institutional barriers are more pronounced (Yousafzai et al., 2022). Moreover, many studies document that improving an economy's regulatory and normative environments promotes entrepreneurial engagement (Elam et al., 2021). In addition, other drivers of female entrepreneurship are cultural norms and cognition (McAdam et al., 2022). Moreover, studies have highlighted that institutional norms either enable or constrain the entrepreneurial intentions depending on the social context (Yousafzai et al., 2022). Furthermore, Welter et al. (2023) highlight that social legitimacy, networks, and policy support an inclusive entrepreneurship ecosystem for women.

H2: Institutional environment “positively affects female entrepreneurial activity.”

Government and NGOs Female Entrepreneurship

In developing countries like Pakistan, the government and non-governmental organizations (NGOs) play a critical role in promoting a female entrepreneurial ecosystem (Abebe & Kegne, 2023). Factors such as training programs, policy incentives, and networking opportunities directly affect entrepreneurial activity (Mahfoud, 2023). Recent studies show that government support, such as improved access to finance and skill development, is a determinant of the government support system, which is essential for promoting female entrepreneurship (Mahfoud, 2023). In this context, we argue that coordinated government initiatives, including microcredit schemes and enterprise development agencies, promote women's participation in entrepreneurial activities, both directly and indirectly.

Recent studies have highlighted that if the government improves microcredit schemes and enterprise development agencies, it would significantly promote female entrepreneurship (Abebe & Kegne, 2023). Moreover, past studies document that government support enhances women entrepreneurs' performance and operational efficiency. Thus, we argue that access to financial services and institutional support mechanisms contributes to women's business growth and sustainability. In this context, Rizvi et al. (2023), based on a study in Pakistan, found that institutional support mechanisms, such as socio-cultural and financial constraints, limit entrepreneurial participation. Moreover, Abdelwahed et al. (2023) found that NGOs and government agencies directly and indirectly enhance women's entrepreneurial self-efficacy and venture performance.

H3: Government and NGO "support positively affect female entrepreneurship."

Perceived Assistance to Finance and Female Entrepreneurial Activity

Besides other factors, perceived access to finance is a crucial determinant of female entrepreneurial activity. It is the female perception of their ability to access financial resources, including loans and credit, to start a new venture (Younas & Rafay, 2021). Many researchers argue that access to financial resources is a structural, perceptual, and capability-based factor (Sarı & Karabulut, 2023). These factors affect female entrepreneurship directly and indirectly. Sarı and Karabulut (2023) also supported this, highlighting that difficulties in accessing institutional finance restrict women's participation, especially in developing countries. On the other hand, in economies with improved access to finance, female entrepreneurs' participation in entrepreneurial activities increased substantially (Abebe & Kegne, 2023). Based on empirical evidence, many researchers recommend that policymakers improve financial services to increase entrepreneurial activities (Abebe & Kegne, 2023).

In addition, many studies have noted that female financial literacy and financial awareness enhance perceived access to finance. As a result, it affects entrepreneurial outcomes (Younas & Rafay, 2021). Moreover, Abebe and Kegne (2023) document that women with greater financial knowledge and better access to financial resources make more effective business decisions (Abebe & Kegne, 2023). Furthermore, we believe that financial inclusion mechanisms, including microfinance and digital finance, play a transformative role that enables women entrepreneurs to overcome a range of barriers (Younas & Rafay, 2021).

H4: Perceived access to finance positively affects female entrepreneurial activity.

Institutional Environment, Self-efficacy, and Female Entrepreneurial Activity

Past studies have shown that self-efficacy moderates the relationship between the institutional environment and female entrepreneurial activity (Alharthi, 2024). Self-efficacy in finance is an individual's belief in their ability to perform entrepreneurial tasks. It determines how effectively institutional conditions are utilized (Thathsarani et al., 2025). Building on the foundation laid by Thathsarani et al. (2025), we argue that self-efficacy influences how female entrepreneurs seize opportunities and respond to cultural and other constraints. Moreover, Khan et al. (2023) argue that the institutional environment (i.e., favorable regulations, access to finance, and government support) promotes entrepreneurial opportunities. However, researchers believe individuals' effectiveness depends on an individual's confidence and ability to leverage these resources (Younas & Rafay, 2021).

Many empirical studies in the domains of entrepreneurship have also supported this intractability (Younas & Rafay, 2021). Moreover, many studies have documented that institutional support increases female entrepreneurial self-efficacy; as a result, venture performance also increases substantially (Islam & Alharthi, 2024). Furthermore, Shahid et al. (2024) found that individuals with higher self-efficacy are better able to recognize financial opportunities and mobilize them effectively. On the other hand, individuals with low self-efficacy cannot recognize financial opportunities and mobilize them effectively. Building on the above discussions, we argue that high self-efficacy strengthens the association with the institutional environment. Low self-efficacy weakens the association between institutional framework and female self-efficacy (Alharthi, 2024).

H5: Self-efficacy moderates the relationship between the institutional environment and female entrepreneurial activity.

Personal Traits, Family Support, and Female Entrepreneurial Activity

Many past studies have documented that family support moderates the association between personal traits and female entrepreneurial activity (Ge et al., 2022). Personal traits for entrepreneurship gradually develop in females. Families who are already involved in a business venture develop attitudes toward risk-taking, problem-solving, and independence (Laspita et al., 2021). Many prior studies document that social support systems increase self-efficacy, motivating individuals to use their capabilities to venture into business (Sieger et al., 2023). Moreover many recent studies have also endorsed this argument, highlighting that family support plays a vital role in improving women's entrepreneurial outcomes (Lindquist et al., 2022). For example, Ge et al. (2024) noted that family-related factors (i.e., family size and support) promote entrepreneurial performance. Similarly, Lindquist et al. (2022) noted that family emotional support reduces role conflict, thereby facilitating females' engagement in business activities. Additionally, another study documents that family support enhances female self-efficacy and innovation (Sieger et al., 2023). Moreover, recent evidence suggests that family support boosts females' confidence and helps them navigate cultural barriers, leading to positive entrepreneurial outcomes (Laspita et al., 2021). Based on the above, we argue that high family support increases the association between the institutional environment and female entrepreneurial activity. Conversely, low family support reduces the relationship between the institutional environment and family entrepreneurial activity.

H6: Female support "moderates the relationship between the institutional environment and female entrepreneurial activity."

Financial Literacy, Government and NGOs, and Female Entrepreneurial Activity

Dangcil et al. (2024), document that financial literacy moderates the effects of government and NGO support and female entrepreneurial activity. Many studies document that financial literacy is an important determinant of financial decision-making, resource management, and the engagement of female entrepreneurs (Rizvi & Ahmad, 2024). The success of women entrepreneurs, among other factors, depends significantly on the availability of financial resources from the government and NGO. Women with higher financial literacy can access resources from the government and NGOs (Sadiq et al., 2023). Such women would be successful entrepreneurs. Moreover, females with lower literacy do not have the capability to tap into resources from the government and NGOs. Such women would not be successful (Showkat et al., 2024). Many studies recommend that the government and NGOs organize financial literacy workshops. The workshop must, in addition to enhancing financial literacy, also provide

information on where women can access financing for their ventures.

Additionally, many empirical studies, including Showkat et al. (2024), document that financial literacy directly affects women's ability to use financial and institutional resources, such as digital financial services and formal support mechanisms. (Sadiq et al., 2023). In the context of Pakistan, many studies have found that financial literacy improves female entrepreneurial ability to manage financial resources and evaluate business opportunities (Rizvi & Ahmad, 2024). On one hand, many prior empirical studies document that individuals with higher financial knowledge are better able to leverage external support systems (Sadiq et al., 2023). On the other hand, females with lower financial knowledge cannot leverage external support systems. Importantly, prior research suggests that high financial literacy moderates the relationship between government and NGO support and female entrepreneurial activity (Showkat et al., 2024).

H7: Financial literacy “moderates Government and NGO’s and the environment and female entrepreneurial activity.”

Conceptual Framework

This study has one dependent variable (female entrepreneurship). Four predictors (i.e., personal traits, institutional environment, government and NGOs assistance, and perceived access to finance) and three moderators (i.e., self-efficacy, family support, and financial literacy). The proposed conceptual framework is depicted in Figure 1.

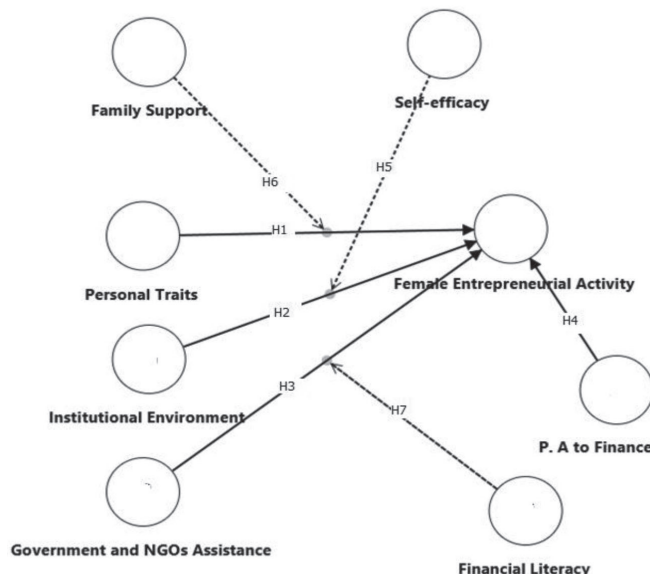


Figure 1: Conceptual Framework

Methodology

Research Design

The study used a quantitative research design. It aimed to examine the antecedents influencing female entrepreneurial activity. Researchers believe that the quantitative approach allows researchers to systematically measure and analyze the relationships among variables (e.g., family support, environmental factors, NGO assistance, access to finance, self-efficacy, personal traits, and financial literacy). The study adopted a cross-sectional research design. In this design, data were collected at a single point from the target audience (i.e., female entrepreneurs). Moreover, the study adopted a deductive approach. In this study, we, based on existing theories and literature, developed a conceptual framework and tested the articulated hypothesis using primary data collected through a questionnaire adapted from past studies. The study used SmartPLS for data analysis, as it is user friendly and can simultaneously test multiple relationships.

Sampling Technique and Sample Size

The study used purposive sampling, which is appropriate for large-scale consumer research. While collecting data from the target population, we ensured that we included female entrepreneurs in small and medium-sized enterprises (SMEs). Many researchers believe that a sample size of 200-300 is appropriate for studies using Smart PLS. However, we distributed 350 questionnaires and received 325 filled-in questionnaires

Scales and Measures

The study adopted the questionnaire used in previous studies. The responses were measured using a five-point Likert Scale (e.g., from strongly disagree to strongly agree). Table 1 shows the scales, their sources, and the number of items in each scale

Table 1: Constructs and Items Used in the Items

Variables	Sources	Items
Female Entrepreneurial Activity	Khan et al. (2021)	5
Institutional Environment	Busenitz et al. (202)	6
Government and NGOs Assistance	Bruton et al. (2021)	7
Perceived Access to finance	Abebe and Kegne, M. (2023).	5
Self- Efficacy	Newman et al.(2021)	6
Family Support	Eddleston and Powell, (2012	5
Financial Literacy	Lusardi and Mitchell (2023).	7

Data Analysis Techniques

The study used SmartPLS for data analysis. After collecting the data, we ensured it was

complete in all aspects. Subsequently, it was imported into Smart PLS for generating the measurement model. Then, before generating the structural model, we ensured that the constructs' reliability and validity were within the acceptable range.

Ethical consideration

As suggested by Spyros and Langkos (2014) and other researchers, we followed ethical protocols. Before the respondents began filling out the questionnaire, they were informed that it was not mandatory. They were also informed that their data would not be shared with others. It would be used for educational purposes.

Results

Respondent Profile

The study developed the respondents' profile. Table 2 shows the respondents' profiles by age, gender, marital status, education, and income level. The purpose of developing it was to ensure it represents the targeted population of female entrepreneurs.

Table:2 Demographic Profile

Variable	Category	Percentage
Age	18–25 years	28%
	26–35 years	35%
	36–45 years	22%
	46 years and above	15%
Gender	Female	100%
	Single	40%
Marital Status	Married	55%
	Divorced/Widowed	5%
	High School	20%
Education	Bachelor's Degree	45%
	Master's Degree	25%
	Other	10%
	Below 50,000	30%
Income (Monthly)	50,000 – 100,000	40%
	100,001 – 150,000	20%
	Above 150,000	10%

Measurement Model

Subsequent to the demographic profile, we developed the measurement model depicted in Figure 2. Based on the results, we found that all the constructs fulfill the

requirements of validity and reliability. The measurement model is depicted in Figure 2.

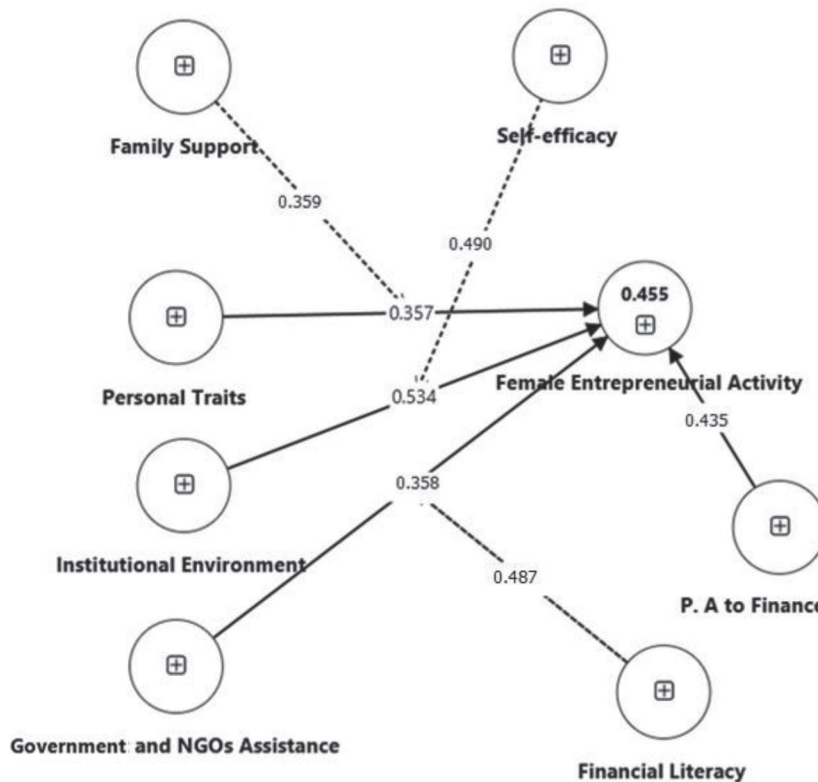


Figure 2: Measurement Model

Convergent Validity

We conducted a convergent validity analysis to assess whether the measured items adequately converge on their respective constructs. Table 3 shows that all composite reliability and AVE values meet the requirement for convergent validity.

Table 3: Convergent Validity

Construct	Cronbach's alpha	Composite reliability)	Average variance extracted (AVE)
Family Support	0.777	0.800	0.586
Female Entrepreneur Activity	0.642	0.650	0.584
Financial Literacy	0.717	0.726	0.440
Gov.& NGOs Assistance	0.805	0.828	0.580

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Institutional Environment	0.731	0.794	0.528
Perceived Access to Finance	0.796	0.804	0.711
Personal Traits	0.779	0.780	0.694
Self-efficacy	0.868	0.864	0.692

R and Q Sqaure Values

The study evaluated R and Q-square values to assess the overall effectiveness of the measurement model. The results in Table 4 show that these values are between the threshold values of 0.25 and 0.50, suggesting a moderate fit.

Table 4: R and Q Sqaure Values

	R-square	R-square adjusted
Female Entrepreneur Activity	0.455	0.449

Fit indices

The study assessed the adequacy of the measurement model using standardized root mean square residual (SRMR), normed fit index (NFI), and other relevant fit indices. Table 5 shows that all fit indices are within the prescribed range, indicating that the measurement model fits well.

Table 5: Fit Indices

Indices	Saturated model	Estimated model
SRMR	0.085	0.085
d_ULS	3.598	3.598
d_G	1.799	1.799
Chi-square	7663.486	7663.532
NFI	0.535	0.535

Discriminant Validity (Fornell–Larcker Criterion)

It is necessary to ensure that the constructs used in the study are unique and empirically different. For this, we used the Fornell–Larcker Criterion. The results in the table show that “Square root of AVE values are greater than correlation value, confirming the constructs are unique and empirically different.”

Table 6: Discriminant Validity (Fornell–Larcker Criterion)

	FS	FE	FL	GNO	IE	PAF	PT	SE
	0.766							
Female Entrepreneurial	0.111	0.764						
Financial Literacy	0.584	0.080	0.664					
Government and NGOs Assistance	0.057	0.320	0.096	0.762				
Institutional Environment	-0.015	0.545	0.070	0.474	0.727			
Perceived Access to Finance	-0.031	0.309	0.080	0.522	0.747	0.843		
Personal Traits	0.124	0.513	0.118	0.211	0.294	0.115	0.833	
Self-efficacy	0.008	0.067	0.051	0.090	0.150	0.122	0.013	0.832

Discriminant Validity Heterotrait–Monotrait (HTMT)

Researchers believe that discriminant validity results based on the Fornell–Larcker are not sufficiently sensitive and lack reliability (Hair Jr., 2017). They also suggest that, in addition to the Fornell–Larcker discriminant validity, the researchers must assess it using the HTMT ratio. Following the advice of the aforementioned researchers, we assessed discriminant validity using the HTMT ratio reported in Table 7. The results show that HTMT values are below 0.850, confirming construct validity based on HTMT ratios.

Table 7: Discriminant Validity Heterotrait–Monotrait (HTMT)

	FS	FE	FL	GNO	IE	PAF	PT	SE
Family Support	-							
Female Entrepreneurial	0.142							
Financial Literacy	0.752	0.086						
Government and NGOs Assistance	0.111	0.453	0.180					
Institutional Environment	0.075	0.701	0.166	0.684				
Perceived Access to Finance	0.063	0.435	0.150	0.671	0.819			
Personal Traits	0.160	0.719	0.134	0.272	0.348	0.148		
Self-efficacy	0.053	0.076	0.064	0.124	0.193	0.165	0.053	-

Hypothesis Results

The study proposed four direct and three moderating hypotheses. Table 8 shows the results in terms of beta, t, and p values. And Figure 3 depicts structural model.

Table 8: Hypothesis Results

Hypothesis	B	T.Stat.	P values	Results
Personal traits -> F Entrepreneurial A. (H1)	0.357	13.383	0.005	Accepted
I. Environment -> F. Entrepreneurial A. (H2)	0.534	10.147	0.000	Accepted
G. NGOs Assistance -> F Entrepreneurial A. (H3)	0.358	2.395	0.017	Accepted
P. Access to Finance -> F. Entrepreneurial A (H4)	0.435	3.459	0.001	Accepted
S. Efficacy x P. Traits -> F. Entrepreneurial A (H5)	0.490	11.632	0.002	Accepted
F. Support x P. Traits -> F. Entrepreneurial A.(H6)	0.359	10.564	0.003	Accepted
F. Literacy x G. NGOs As.s -> F Entrepreneurial A.(H7)	0.487	9.857	0.003	Accepted

The results in Table 8 show that all the articulated hypotheses were supported. The strongest effect was observed for the “institutional environment on female activity” ($\beta=534$, $t=10.147 < 0.05$). The lowest effect was on the association “between personal traits and female entrepreneurial activity” (0.357 , $t=13.293 < 0.05$).

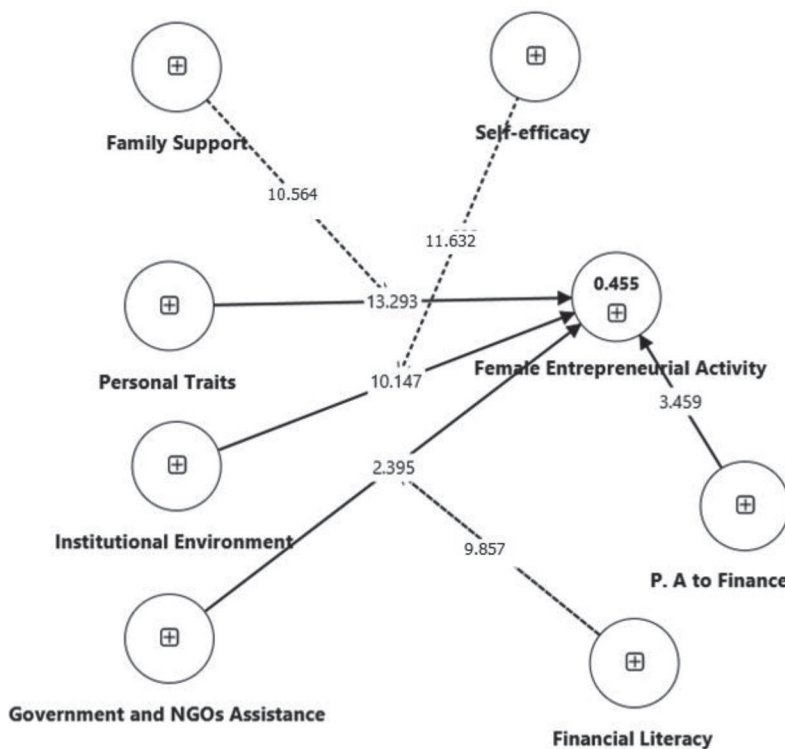


Figure 3: Structural Model

Discussion and Conclusion

Discussion

The results support Hypothesis 1: "Personal traits positively affect female entrepreneurial activity." ($\beta=0.357$, $t=13.383 < 0.05$). Individuals' attitudes and behavior, including those of females, affect entrepreneurial behavior. Researchers believe it also motivates individuals in decision-making and enables them to manage business challenges (Cao et al., 2022). Moreover, researchers believe that some key drivers of entrepreneurial behavior include proactivity, risk-taking, and an internal locus of control (Cao et al., 2022). Furthermore, these characteristics help women identify and mobilize resources and business opportunities. As a result, the women are able to start and continue their businesses despite socioeconomic barriers (Jalil et al., 2023). Additionally, researchers believe that traits such as self-confidence, resilience, and self-efficacy are important for women entrepreneurs in developing countries, especially in cultures where cultural and structural constraints limit participation (Feng et al., 2023). Moreover, researchers have noted that psychological factors, in particular self-confidence and resilience, significantly promote women's entrepreneurship in developing economies, where they must cope with structural and cultural constraints (Jalil et al., 2023).

We found support for Hypothesis 2: "Institutional environment positively affects female entrepreneurial activity" ($\beta=0.534$, $t=10.147 < 0.05$). Many antecedents affect female entrepreneurship, but one important one is institutional female environment (Elam et al., 2021). Yousafzai et al. (2022) argue that cultural norms and social expectations are antecedents of the institutional environment, which directly and indirectly affect female entrepreneurship. Recent studies have endorsed that "a supportive institutional environment positively influences female entrepreneurial activity" (McAam et al., 2022). Based on these findings, we argue that institutional quality reduces gender gaps in entrepreneurship.

Similarly, many studies argue that the institutional environment is critical in shaping women's entrepreneurship and creating venture capital. This is more relevant in emerging economies because institutional barriers are more pronounced (Yousafzai et al., 2022). Moreover, many studies document that improving an economy's regulatory and normative environments promotes entrepreneurial engagement (Elam et al., 2021). In addition, other drivers of female entrepreneurship are cultural norms and cognition (McAdam et al., 2022). Furthermore, studies have highlighted that institutional norms either enable or constrain entrepreneurial intentions depending on the social context (Yousafzai et al., 2022). Additionally, Welter et al. (2023) highlight that social legitimacy, networks, and policy support an inclusive entrepreneurship ecosystem for women.

We accepted Hypothesis 3: "Hypothesis 3: Government and NGO assistance positively affects entrepreneurial activity" ($\beta = 0.358$, $t = 2.395 < 0.05$). In developing countries like Pakistan, the government and non-governmental organizations (NGOs) play a critical role in promoting a female entrepreneurial ecosystem (Abebe & Kegne, 2023). Factors such as training programs, policy incentives, and networking opportunities directly affect entrepreneurial activity (Mahfoud, 2023). Recent studies show that government support, such as improved access to finance and skill development, is a determinant of the government support system, which is essential for promoting female entrepreneurship (Mahfoud, 2023). In this context, we argue that coordinated government initiatives, including microcredit schemes and enterprise development agencies, promote women's participation in entrepreneurial activities, both directly and indirectly.

Recent studies have highlighted that if the government improves microcredit schemes and enterprise development agencies, it would significantly promote female entrepreneurship (Abebe & Kegne, 2023). Moreover, past studies document that government support enhances women entrepreneurs' performance and operational efficiency. Thus, we argue that access to financial services and institutional support mechanisms contributes to women's business growth and sustainability. In this context, Rizvi et al. (2023), based on a study in Pakistan, found that institutional support mechanisms, such as socio-cultural and financial constraints, limit entrepreneurial participation. Moreover, Abdelwahed et al. (2023) found that NGOs and government agencies directly and indirectly enhance women's entrepreneurial self-efficacy and venture performance.

We found support for Hypothesis 4: "Perceived access to finance positively affects entrepreneurial activity." ($\beta = 0.435$, $t = 2.395 < 0.05$). Besides other factors, perceived access to finance is a crucial determinant of female entrepreneurial activity. It is the female perception of their ability to access financial resources, including loans and credit, to start a new venture (Younas & Rafay, 2021). Many researchers argue that access to financial resources is a structural, perceptual, and capability-based factor (Sari & Karabulut, 2023). These factors affect female entrepreneurship directly and indirectly. Sari and Karabulut (2023) also supported this, highlighting that difficulties in accessing institutional finance restrict women's participation, especially in developing countries. Moreover, in economies with improved access to finance, female entrepreneurs' participation in entrepreneurial activities increased substantially (Abebe & Kegne, 2023). Based on empirical evidence, many researchers recommend that policymakers improve financial services to increase entrepreneurial activities (Abebe & Kegne, 2023). In addition, many studies have noted that female financial literacy and financial

awareness enhance perceived access to finance. As a result, it affects entrepreneurial outcomes (Younas & Rafay, 2021). Moreover, Abebe and Kegne (2023) document that women with greater financial knowledge and better access to financial resources make more effective business decisions (Abebe & Kegne, 2023). Furthermore, we believe that financial inclusion mechanisms, including microfinance and digital finance, play a transformative role that enables women entrepreneurs to overcome a range of barriers (Younas & Rafay, 2021).

We accepted Hypothesis 5: "Self-efficacy moderates the relationship between personal traits and female entrepreneurial activity" ($\beta=0.490$, $t=11,632<0.05$). Past studies have shown that self-efficacy moderates the relationship between the institutional environment and female entrepreneurial activity (Alharthi, 2024). Self-efficacy in finance is an individual's belief in their ability to perform entrepreneurial tasks. It determines how effectively institutional conditions are utilized (Thathsarani et al., 2025). Building on the foundation laid by Thathsarani et al. (2025), we argue that self-efficacy influences how female entrepreneurs seize opportunities and respond to cultural and other constraints. Moreover, Khan et al. (2023) argue that the institutional environment (i.e., favorable regulations, access to finance, and government support) promotes entrepreneurial opportunities. However, researchers believe individuals' effectiveness depends on their confidence and ability to leverage these resources (Younas & Rafay, 2021).

Many empirical studies in the domains of entrepreneurship have also supported this intractability (Younas & Rafay, 2021). Moreover, many studies have documented that institutional support increases female entrepreneurial self-efficacy; as a result, venture performance also increases substantially (Islam & Alharthi, 2024). Furthermore, Shahid et al. (2024) found that individuals with higher self-efficacy are better able to recognize financial opportunities and mobilize them effectively. Moreover, individuals with low self-efficacy cannot recognize financial opportunities and mobilize them effectively. Building on the above discussions, we argue that high self-efficacy strengthens the association with the institutional environment. Low self-efficacy weakens the association between institutional framework and female self-efficacy (Alharthi, 2024).

Our results supported Hypothesis 6: "Family support moderates the relationship between the institutional environment and female entrepreneurial activity" ($\beta=0.359$, $t=10.564 < 0.05$). Many past studies have documented that family support moderates the association between personal traits and female entrepreneurial activity (Ge et al., 2022). Personal traits for entrepreneurship gradually develop in females. Families who are already involved in a business venture develop attitudes toward risk-taking,

problem-solving, and independence (Laspita et al., 2021). Many prior studies document that social support systems increase self-efficacy, motivating individuals to use their capabilities to venture into business (Sieger et al., 2023). Moreover many recent studies have also endorsed this argument, highlighting that family support plays a vital role in improving women's entrepreneurial outcomes (Lindquist et al., 2022). For example, Ge et al. (2024) noted that family-related factors (i.e., family size and support) promote entrepreneurial performance. Similarly, Lindquist et al. (2022) noted that family emotional support reduces role conflict, thereby facilitating females' engagement in business activities. Additionally, another study documents that family support enhances female self-efficacy and innovation (Sieger et al., 2023). Moreover, recent evidence suggests that family support boosts females' confidence and helps them navigate cultural barriers, leading to positive entrepreneurial outcomes (Laspita et al., 2021). Based on the above, we argue that high family support increases the association between the institutional environment and female entrepreneurial activity. Conversely, low family support reduces the relationship between the institutional environment and family entrepreneurial activity.

We accepted hypothesis 7: "Financial literacy moderates the relationship between government and NGO and female entrepreneurial activity" ($\beta=0.487$, $t=9.857$ <0.05). Dangcil et al. (2024), document that financial literacy moderates the effects of government and NGO support and female entrepreneurial activity. Many studies document that financial literacy is an important determinant of financial decision-making, resource management, and the engagement of female entrepreneurs (Rizvi & Ahmad, 2024). The success of women entrepreneurs, among other factors, depends significantly on the availability of financial resources from the government and NGO. Women with higher financial literacy can access resources from the government and NGOs (Sadiq et al., 2023). Such women would be successful entrepreneurs. Moreover, females with lower literacy do not have the capability to tap into resources from the government and NGOs. Such women would not be successful (Showkat et al., 2024). Many studies recommend that the government and NGOs organize financial literacy workshops. The workshop must, in addition to enhancing financial literacy, also provide information on where women can access financing for their ventures.

Additionally, many empirical studies, including Showkat et al. (2024), document that financial literacy directly affects women's ability to use financial and institutional resources, such as digital financial services and formal support mechanisms (Sadiq et al., 2023). In the context of Pakistan, many studies have found that financial literacy improves female entrepreneurial ability to manage financial resources and evaluate business opportunities (Rizvi & Ahmad, 2024). Additionally, many prior empirical

studies document that individuals with higher financial knowledge are better able to leverage external support systems (Sadiq et al., 2023). On the other hand, females with lower financial knowledge cannot leverage external support systems. Importantly, prior research suggests that high financial literacy moderates the relationship between government and NGO support and female entrepreneurial activity (Showkat et al., 2024).

Conclusion

Many research studies have now focused on female entrepreneurship as it is a key driver of inclusive economic development and social progress. It is therefore imperative for policymakers and entrepreneurs to understand the antecedents of women's entrepreneurship. Female entrepreneurs in developed and developing countries contribute significantly in generating household income. Despite this, they have several disadvantages compared to their male counterparts. They have to cope with the cultural and other barriers common in developing countries. Given these, we have developed a conceptual framework with one dependent variable (female entrepreneurial activity). Four predictors (i.e., Personal traits, institutional environment, government and NGOs' assistance, and perceived access to finance). Three moderators (i.e., self-efficacy, family support, and financial literacy). We collected the data using a pre-developed questionnaire adopted from past studies. The target population for this study was female entrepreneurs in urban cities. The study sample size was 325, and we collected data both in person and online. We accepted Hypothesis 1: "Personal support positively affects female entrepreneurial activity. The results support Hypothesis 2: "Institutional environment positively affects female entrepreneurial activity. The results support Hypothesis 3: "Government NGO assistance positively affects female entrepreneurial activity. We accepted Hypothesis 4: "Perceived access to finance positively affects female entrepreneurial activity. The results support Hypothesis 5: "Self-efficacy moderates the relationship between personal traits and female entrepreneurial activity. The results support Hypothesis 6: "Financial support moderates the relationship between personal traits and female entrepreneurial activity. We accepted Hypothesis 7: "Financial literacy moderates the relationship between Government and NGO assistance and female entrepreneurial activity.

Future Directions and Limitations

The study has collected data from one city, and the sample size may affect generalizability. Future studies may collect the data from other cities with a larger sample size. We collected the data using a cross-sectional study design, which is limited in its ability to measure causal effects between variables. We advised future researchers to use a longitudinal design as it provides a comprehensive understanding of how these

relationships evolve over time. In the study, we used four antecedents (i.e., personal traits, institutional environment, government and NGOs and perceived access to finance) to measure entrepreneurial activity. Future studies may examine other antecedents, such as education and skills, social networks, and work-related conditions. We used three moderators (i.e., family support, self-efficacy, and financial literacy). Future researchers may examine other moderators, including cultural and social norms, education and training, and work-family conflict. The study did not examine the mediating relationship which future studies may incorporate into their conceptual frameworks. The research design is quantitative, and it has several limitations. Future studies could be qualitative or mixed methodology as they bring deeper insight to the discussed phenomena.

Annexure 1

Constructs and Items Used in the Questionnaire

Female Entrepreneurial Activity

1. Women in my community actively participate in starting new businesses.
2. Female entrepreneurs have equal access to financial resources as men.
3. Women are encouraged by society to pursue entrepreneurial careers.
4. Female-led businesses contribute significantly to economic growth.
5. Women have adequate access to training and mentorship for entrepreneurship.

Family Support

1. My family supports my decision to pursue entrepreneurial activities.
2. I receive emotional encouragement from my family for my business efforts.
3. My family helps me balance business responsibilities and household duties.
4. I can rely on my family for financial support when needed for my business.
5. My family has a positive attitude toward women running businesses.

Government & NGOs Assistance

1. Government programs provide adequate support for women entrepreneurs.
2. NGOs play an important role in promoting female entrepreneurship.
3. I have access to government funding or grants for starting a business.
4. Training programs offered by NGOs improve entrepreneurial skills among women.
5. Government policies make it easier for women to start and run businesses.
6. I am aware of support programs provided by NGOs for entrepreneurs.
7. Government and NGOs effectively collaborate to support women-led businesses.

Institutional Environment

1. The legal system in my country supports the establishment of new businesses.
2. Government regulations are favorable for women entrepreneurs.
3. It is easy to register and operate a business in my country.
4. The financial system provides adequate support for small and medium enterprises.
5. Cultural norms in society encourage entrepreneurial activities.
6. Institutions such as banks and regulatory bodies treat male and female entrepreneurs equally.

Self-efficacy

1. I am confident in my ability to start a successful business.
2. I can identify profitable business opportunities on my own.
3. I am capable of solving problems that arise in my business.
4. I can effectively manage the financial aspects of a business.
5. I feel confident in making decisions under uncertain business conditions.
6. I can successfully overcome challenges in running a business.

Financial Literacy

1. I understand basic financial concepts such as profit, loss, and interest.
2. I am able to prepare and manage a personal or business budget.
3. I can make informed decisions about saving and investing money.
4. I understand how loans and interest rates work
5. I can read and interpret basic financial statements.
6. I feel confident in managing financial risks in a business.
7. I regularly track and control my personal or business expenses.

Perceived Access to Finance

1. I believe it is easy for me to access loans from financial institutions.
 2. Banks and microfinance institutions are willing to provide funding to women entrepreneurs.
 3. I have sufficient information about available financial support options.
 4. Collateral requirements do not significantly hinder my access to finance.
 5. I feel confident that I can obtain financial resources when needed for my business.
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