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# Sustainable HRM Strategies and Open Innovation: Nurturing Women Entrepreneurs in the Fashion Sector with mediating role of Entrepreneurial Readiness

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# **ABSTRACT**

This research investigates the influence of Sustainable Human Resource Management (HRM) on Women Entrepreneurship Success (WES) in the context of the fashion industry in Southern Punjab, Pakistan. With a focus on boutiques, apparel, embroidery, sewing, beauty parlors, and jewelry businesses, the study aims to demonstrate how Sustainable HRM supports female entrepreneurship, utilizing Entrepreneurial Readiness as a mediator and Open Innovation as a moderator. Data was collected from 300 female entrepreneurs in Multan, Bahawalpur, and DG Khan Division through questionnaires. Structural equation modeling, mediation, moderation, regression, reliability, T-test, and ANOVA analyses were conducted to unveil the latest insights. The findings highlight that Sustainable HRM fosters women entrepreneurship by elevating entrepreneurial readiness and applying entrepreneurship theories. The study is region-specific, limited to Southern Punjab, and reveals potential variations in findings across diverse contexts. Emphasizing Open Innovation, Sustainable HRM, Entrepreneurial Readiness, and WES, the research suggests future exploration of variables such as education, training, unemployment, poverty, and gender discrimination. Notably, this study pioneers the examination of the interplay between Sustainable HRM and women entrepreneurial success in the Pakistani fashion industry, introducing a novel perspective beyond the traditional focus on entrepreneurial readiness and entrepreneurship.

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## 1.0 Introduction

This study aims to systematically investigate the key determinants influencing the success of women entrepreneurs, particularly in the context of Sustainable Human Resource Management (HRM), wherein Entrepreneurial Readiness serves as a mediating factor. The introduction provides a comprehensive overview, encompassing the historical development, significance, research objectives, problem statement, and research inquiries. The term "Sustainable HRM" is introduced as a novel conceptualization, denoting a managerial approach that demonstrates genuine concern for employees by ensuring a secure work environment, fostering developmental opportunities, and prioritizing both their physical and emotional well-being (Wikhamn, 2018). Notably, Sustainable HRM emphasizes the enhancement of the work environment, aligning with social and human objectives, rather than merely prioritizing financial goals and strategies. Entrepreneurship, a burgeoning field of academic inquiry, involves individuals transforming ideas into tangible outcomes, without substantial gender-based differentials in innovativeness (Nahlinder et al., 2019). Gender biases in innovation research are highlighted as an area meriting attention. The success or failure of women-led businesses is contingent upon factors such as planning, oversight, and guidance (Longenecker et al., 2012).

Schilo et al. (2018) posit that Entrepreneurial Readiness hinges on an individual's social capital, convenience, time, willingness, and adequacy, with success relying on the recognition of environmental opportunities, effective resource utilization, and a pursuit of self-actualization. Open Innovation, denoting the practice of generating novel ideas through external partnerships and information exchange, is underscored as a pivotal concept (Monterrico et al., 2015). Drawing on Putnam's (2017) assertion, entrepreneurs can capitalize on business prospects by establishing direct and indirect connections with partners, clients, and market participants, utilizing social resources. Existing literature suggests that Sustainable HRM practices play a pivotal role in facilitating and encouraging women's participation in entrepreneurship by alleviating potential barriers. The study further aims to scrutinize how possessing requisite entrepreneurial skills and mindsets enhances the success of women in business. Additionally, Open Innovation is posited as a facilitator of entrepreneurial readiness by providing essential knowledge and opportunities to stimulate women's entrepreneurship, emphasizing the pivotal role of entrepreneurial experience and knowledge in augmenting the entrepreneurial readiness of female entrepreneurs.

# 2.0 Literature Review

# **Stock Exchange and Foreign Direct Investment**

Initiative takers, knowledge seekers, conscientious about producing high-quality work, devoted, self-assured, and strategic are characteristics of successful women entrepreneurs (Kaushik 2019). Small and medium-sized businesses and home-based businesses are run by women (Kerka, 2019). Women's entrepreneurship is synonymous with women's empowerment and their ongoing contributions to economic growth and innovation. Numerous external obstacles existed, such as limited cultural opportunities and restricted access to education (Nasir suja.R, 2019). Through sustainable HR, women's entrepreneurial attitudes can be fostered. Organizational environments, entrepreneurial education, and the representation of women in the population all

play a part in motivating women to pursue entrepreneurship Women's participation in entrepreneurship can be increased via government legislation and training initiatives (Khan M 2019). It is crucial to highlight female entrepreneurs as role models, make sure that entrepreneurial education is gender-neutral, remove obstacles in the way of women's success, and inspire women to pursue careers in all fields (Khan M 2019).

According to Stephen (E.N. 2014), women's participation in entrepreneurship and innovation enhanced economic development, reduced poverty, raised living standards, and increased family income. Lack of information, discrimination based on gender, unfavorable cultural perceptions, a lack of laws protecting the interests of female entrepreneurs, and interacting with a society dominated by men are all examples of these issues. If lawmakers adopt measures to promote innovation, growth, and creativity, barriers to women entrepreneurship can be removed (Ascher, 2012). These obstacles can be removed once an organization integrates sustainable HRM. Women entrepreneurs working in the microsphere, conducting business in the local market, and wanting to live close to their families are three areas of women entrepreneurship growth described by Abhilash, B., and Prashar, M. (2019).

Working in the mesosphere, female entrepreneurs operate on a national scale. In the macro domain, female entrepreneurs operate on a global scale. obstacles faced by female entrepreneurs in developing nations (Gupta, S., & Aggarwal, A. 2015) absence of professional obligations; the majority of women possess entrepreneurial talents, but their family responsibilities prevent them from engaging in entrepreneurial activity. Risk aversion: Some women avoid taking on risks because they find them unpleasant, which keeps them from becoming entrepreneurs. Economic instability and inadequate education for women, particularly in rural regions, are major issues. Rural women are unable to engage in entrepreneurial endeavors Lack of finance is the main obstacle to the growth of women's entrepreneurship. Women own four main types of businesses: parlors, boutiques, clothing stores, and fashion. Absence of family support; society and family were against women's independence. Lack of confidence; women constantly believe they are less capable than males and are unable to take risks (Majid.M 2013).

The terms "long term," "lasting," "workable," and "organized" are equal to the word "sustainable" (Leal Filho 2018). The word "sustainability" is derived from Latin speech; its suffix "able" denotes the capacity to maintain, develop, and strengthen; the verb "sustenere" means "to maintain," "to sustain," and "to strength." Sustainability refers to operating a firm in a way that benefits the environment, economy, and workers. The foundation upon which an organization is built is crucial (Farouk, S., Cherian, J. 2017). Tho and Zaugg (2017) state that effective implementation of defined procedures for hiring and keeping people, training and development, performance management, employee commitment and engagement, and motivation is the cornerstone of sustainable human resource management. Eight HR practices are identified by Barrena-Martínez et al. (2017): employment, employee control relations, health and safety related to the job, Studies have identified certain sustainable human resource management strategies such as coaching, diversity and equal chances, equitable remuneration, work environment and social security, and communication and information exchange. According to Zivile Stankeviciute and

Asta Savaneviciene (2018), sustainable HRM can help to lower barriers to women entrepreneurship.

The readiness of female employees for entrepreneurship can be influenced by sustainable human resource practices. Gibb and Ritchie (2019) have identified a number of potential characteristics, including family, business, organization, lifestyle, and prior experience, that may encourage female employees to pursue entrepreneurship. The majority of women think that policies from organizations and the government discriminate against women who pursue business. Gender discrimination in enterprise can be eliminated through sustainable HR (Khan M 2019). Entrepreneurial readiness is crucial for entrepreneurial activities, so researchers and academics pay close attention to it. (Zaugg, Blum & Thom, 2018) Sustainable HRM and Entrepreneurial Readiness aid in boosting the proficiency of female employees and guaranteeing work-life harmony. In order to prevent discrimination that would discourage women from engaging in innovative activities, sustainable human resources (HR) promote fairness and quality among a diverse workforce, provide women with specialized training to hone their entrepreneurial skills, value women's ideas and opinions as much as those of men, provide desirable profit, provide women with health and care packages, provide a sufficient workload, allow for flexible work schedules, and maintain a tidy and peaceful work environment. These measures boost the motivation levels of female entrepreneurs and enhance their preparedness to enter the market (Zivile Stankeviciute and Asta Savaneviciene 2018). Particular mindfulness training programs for female entrepreneurs will enhance the knowledge and abilities of existing female entrepreneurs and foster the development of new skills essential for female entrepreneurs to enter the market. Women entrepreneurs can think creatively thanks to mindfulness training (Penman, 2015).

According to Portes (2018), social capital is defined as personal gain derived from one's network of social relationships. Empirical research conducted by Schilo et al. (2018) demonstrates that women can engage in entrepreneurship if they recognize the right chances (Shane and Venkataraman 2018). Risk aversion has an impact on the aspirations of female entrepreneurs as well as the degree of motivation of female employees to engage in entrepreneurial activities. (Welpe, Burnstein, and others, 2018). The rate of women entrepreneurship at the local level is significantly impacted by risk aversion (Vailant and Lafuente 2018). Self-efficacy is the belief that one can accomplish particular objectives by carrying out particular actions (Bandura, Chen et al., 2018). Entrepreneurship is positively impacted by self-efficacy. People with these unique qualities are expected to add to the possible results that can arise from starting a new company. (Hussin, H. et al., 2019) defines entrepreneurship as the readiness to show interest in starting a business in the future. Simple businessmen lack the same level of imagination as entrepreneurs do. Their constant goal is to draw clients ahead of rivals with creative concepts (Bygrave and Hofer 2019).

A potent driver for advancing entrepreneurial abilities is entrepreneurship training (Zahra, 2016). Training can improve the skills, understandings, attitudes, and knowledge required to be prepared for entrepreneurship (Seun & Kalsom, 2015b). Organizations should regularly offer training courses to help women develop their entrepreneurial abilities. Each person possesses certain entrepreneurial talents, but they are not fully developed; only an entrepreneurial perspective

can allow for the full development of these skills (Miller, 2011). Management, financial, marketing, team-building, an efficient business plan, and administrative abilities are all components of entrepreneurial competence. Entrepreneurial aptitude is a person's capacity to put ideas into action. It also includes the capacity for taking calculated risks, being creative, and managing an inventive plan. Managing all tasks, including management, finances, marketing, and administration, etc., successfully is what is meant by entrepreneurial skill. Theoretical frameworks related to entrepreneurship are essential for promoting entrepreneurship in underdeveloped nations. The social, behavioral, and natural sciences as well as the arts and humanities have examined the significance of ideas in describing social life events (Omonijo, Obiorah, Uche, Anyaegbunam, Shaibu, and Ogunwa, 2017; Oh, and Lee, 2018). Every theory was used differently to various societal challenges.

When employees of a company work with outside partners in an open innovation environment, their innovative performance speeds up and becomes more efficient (H. Chesbrough and S. Brunswicker, 2020). The phrase "open innovation" was used by Chesbrough (2015) to refer to the deliberate exchange of knowledge both inside and outside the company in order to foster internal innovation. Innovation openness is measured by how eager you are to collaborate with other organizations, businesses, research centers, and the environment.

Innovation is characterized as a novel concept and idea expressed as a technique or as an enhancement of current objects and circumstances. Open source organizations are free to utilize their knowledge and talents without restriction, and they are not subject to any form of intellectual property security measures, such as copyright or trademark restrictions. Organizations that license patents are able to use their technology and expertise for a price. According to Nedon (2015), open innovation refers to an organization's intention to accelerate its innovation process by disclosing its innovation-related activities to outside partners. Any corporation that wishes to transition from "closed innovation" to "open innovation" must alter its organizational structure and business strategy. It also has to strengthen its capabilities in order to enhance its resource allocation. Businesses with restricted innovation will not last in this cutthroat environment for long. Organizations ought to use open innovation to define their intellectual property (Chesbrough, 2016). Any organization's ability to grow depends not just on its own internal capabilities but also on its ability to take advantage of outside chances to find fresh perspectives, innovative solutions, and cutting-edge equipment. According to Dodgeson et al. (2017), open innovation refers to the knowledge sources that can aid in an organization's inventive development. Organizations used to primarily rely on their own resources, talents, and capabilities, but with today's fierce competition, internal resources and capabilities are insufficient for survival. In order to engage in innovative activities, organizations should integrate internal research and development with external information, data, and ideas (Chesbrough, 2016).

Women Entrepreneurship: Entrepreneurial Readiness According to Coduras, Saiz-Alvarez, and Ruiz (2017), success depends on one's capacity to take advantage of a variety of environmental chances, apply one's entrepreneurial ability in light of the resources at hand, and satisfy one's own drive for achievement Women's participation in the sphere of entrepreneurship is increased by

entrepreneurial readiness. Sustainable HRM helps women entrepreneurs become more prepared for entrepreneurship by boosting female entrepreneurs' motivation levels by preventing bias at all levels, giving them a profit-sharing opportunity, maintaining a tidy and tranquil workspace, and lowering their stress levels by assigning them enough work, boosted the capacity for entrepreneurship by offering training in entrepreneurship and encouraging more people to engage in it.

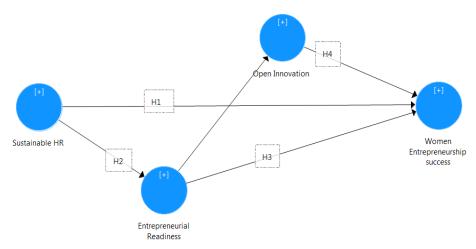


Figure 1: Theoretical Model

# 3.0 Methodology

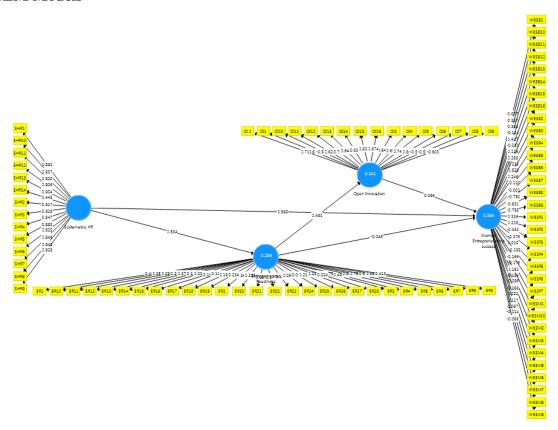
Research methodology is explained in this section which includes research design, the population of the study, sample size, period of data, source of data collection, and research analysis tools. This study is quantitative to analyze the patterns of different factors. All variables have been normalized. This study is founded on a cross-sectional survey. Key subjects in entrepreneurship literature include Sustainable HRM, entrepreneurial readiness, women entrepreneurship, and open innovation. Standardized and validated scales are used in this study to quantify all variables. The respondents were selected using random sampling techniques. A five-point Likert scale was utilized to collect feedback from participants. 300 female entrepreneurs in the fashion industry participated in this poll, all of whom currently own their own small-scale businesses. Out of 300 survey questionnaires distributed, 280 replies were obtained, resulting in an 85% response rate. Data analysis approaches include reliability and validity. Analysis includes regression analysis, ANOVA test, mediation test, and moderation test. Techniques for analyzing data. SPSS version 20 was utilized for regression analysis, while SmartPLS version 3 was employed to test hypotheses.

# 4.0 Data Analysis

The demographic statistics categorize respondents by age into four groups as displayed in following table respondents (18-25 years old), 183 respondents (26-35 years old), 71 respondents (36-45 years old), and 31 respondents (over 46 years old), representing 5%, 61%, 23%, and 10% of the total, respectively. The statistic indicates that most female entrepreneurs are aged between 26 and 35. The respondents were categorized based on their area into Urban and Rural. The frequency of Urban respondents was 223, representing 74.3%, while the frequency of Rural

respondents was 77, representing 25.7%. This statistic indicates that most female entrepreneurs come from urban areas. The respondents were categorized into five occupation groups as displayed in Table 5.3. The frequencies for each occupation were 129 for The Beauty Parlor represents 43%, Embroidery 12.3%, Stitching 18%, Clothing 10.3%, and Bangles/Jewelry 16.3%. Most female entrepreneurs are employed in the beauty salon industry, as shown by this data. The respondents were categorized based on their monthly income into three groups as displayed in Table 5.4. The frequency of respondents in each income bracket was 75 (15000-25000), 74 (25000-35000), and 151 (Above 35000), representing percentages of 25%, 24.7%, and 50.3% correspondingly. The percentage indicates that most female entrepreneurs earn more than 35000 per month. Respondents were categorized based on their marital status into three groups as displayed in the table above. The respondents' marital status distribution was as follows: 131 were single (43.7%), 128 were married (42.7%), and 41 were widowed (13.7%). This statistic indicates that most single ladies operating as entrepreneurs are unmarried. The frequency of respondents owning a personal unit was 60, representing 20%, while those renting a unit were 240, representing 80%. This statistic indicates that most female entrepreneurs who are functioning as entrepreneurs rent their business units.

## **SEM Models**



**Figure 2: Factors Loading Model (The Initial Model)** 

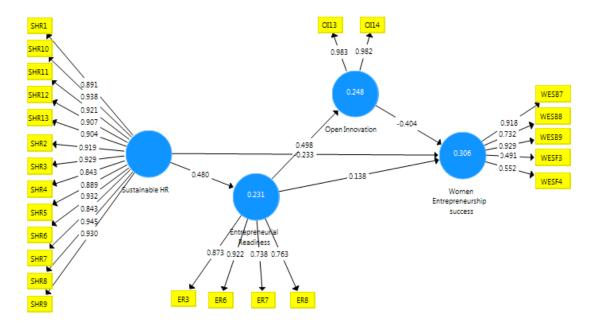


Figure 3: Structural Equation Model (Measurement Model)

Cronbach's Alpha was used to evaluate internal consistency. This section assesses the validity and consistency of the research principles by evaluating the measuring model. All variables have a reliability greater than the default value of 0.7, and the efficacy ranges of the reliability coefficients are as follows.

Table 1: Data Validity and Reliability of Scales

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ER	0.852	0.903	0.896	0.685
OI	0.964	0.964	0.982	0.965
SHR	0.982	0.985	0.984	0.823
WES	0.791	0.894	0.856	0.557

All variables' elements in the table were verified to be valid and reliable under the measurement of Data Reliability and Validity.

**Table 2: Discriminant Validity (Fornell-Larker Criterion)** 

	Entrepreneurial Readiness	Open Innovation	Sustainable HR	Women Entrepreneurship success
ER	929			
OI	.828			
	.498	.983		
SHR	.48	.828	.907	
WES	.10	.020	•507	
	.175	528	501	.746

The table assesses discriminant validity using the Fornell-Larcker Criterion for four constructs. Discriminant validity is confirmed, as the square root of the Average Variance Extracted (AVE) for each construct (bold values on the diagonal) exceeds the correlations with other constructs (off-diagonal elements). This indicates that each construct captures more variance from its indicators than it shares with the other constructs, supporting the distinctiveness of the latent variables.

**Table 3: HTMT Ratio** 

	ER	OI	SHR	WES
ER				
OI	0.260			
SHR	0.199	.075		
WES	0.316	.035	.012	

Table 3 presents the Heterotrait-Monotrait (HTMT) ratio, a measure of discriminant validity, for four constructs. In this table, the HTMT ratios are below the threshold of 0.85, indicating satisfactory discriminant validity. The values on the diagonal are 1, as expected, representing perfect correlations within the same constructs. The off-diagonal values, however, demonstrate that the correlations between different constructs are sufficiently lower than 1, supporting the distinctiveness of the latent variables. Overall, the results suggest that the constructs in the model are adequately distinct from each other, validating the discriminant validity of the measurement model.

# **Assessment of Structural Equation Model**

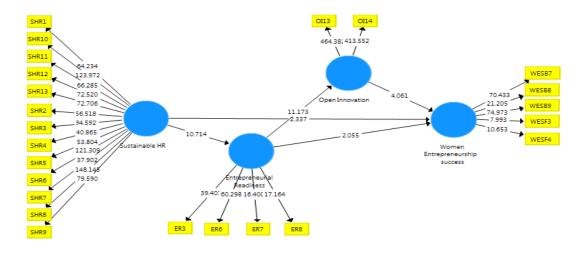


Figure 3: PLS bootstrapping Algorithm Results before Moderating

The table provides statistical results for several hypotheses testing relationships between different constructs. For the hypothesis testing Entrepreneurial Readiness (ER) to Open Innovation

(OI), the original sample coefficient is 0.406, with a T statistic of 3.501, indicating a significant relationship (p = 0.030). Similarly, the hypothesis testing ER to Women Entrepreneurship Success (WES) shows a coefficient of 0.201 with a T statistic of 4.546, also significant at p = 0.010. The relationship between Open Innovation (OI) and Women Entrepreneurship Success (WES) is supported by a coefficient of 0.430 and a T statistic of 9.550, though the p-value is 0.090. Additionally, Sustainable Human Resources (SHR) to ER and SHR to WES both exhibit significant relationships, with coefficients of 0.421 (T = 4.651, p = 0.011) and 0.407 (T = 3.552, p = 0.000), respectively. These findings suggest empirical support for the proposed hypotheses, highlighting significant associations between the examined constructs in the model.

Tabel 4:	<b>Structural</b>	<b>Equational</b>	<b>Modeling</b>
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Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
ER -> OI	0.406	0.001	0.061	3.501	0.030
ER -> WES	0.201	0.008	0.071	4.546	0.010
OI -> WES	0.430	0.116	0.067	9.550	0.090
SHR -> ER	0.421	0.023	0.053	4.651	0.011
SHR -> WES	0.407	0.002	0.055	3.552	0.000

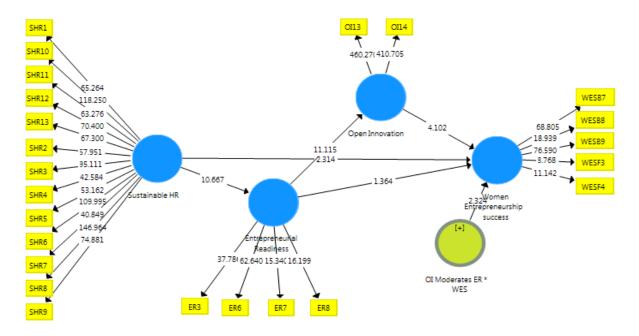


Figure 5: PLS bootstrapping Algorithm Results after Moderating

Tabel 5: Results of Mediating Effect and Hypothesis Testing of H4

	Path Coefficient	SE	T-Value	P- Value	Bootstrap	
PATH					95% LL	95% UL
ER -> OI -> WES						
Total effect	.451	.045	10.287	.000	.546	.540
Direct Effect	.221	.059	3.758	.000	.335	.330
Indirect Effect	.230	.034	9.196	.000	.303	.301

The results in Table 5 indicate a substantial total effect (path coefficient = 0.451, p < 0.001), demonstrating a significant influence of Entrepreneurial Readiness (ER) on Women Entrepreneurial Success (WES) through the combined mediation of Open Innovation (OI). The direct effect of ER on WES is statistically significant (path coefficient = 0.221, p < 0.001), emphasizing its independent impact. Moreover, the indirect effect (path coefficient = 0.230, p < 0.001) via Open Innovation underscores the mediating role of OI in strengthening the relationship between ER and WES, substantiating the hypothesized pathway. The Bootstrap confidence intervals (95%) further validate the robustness of these effects, indicating strong mediation and support for Hypothesis 4.

# **Moderation Analysis**

**Tabel 6: Moderation Analysis** 

	Path				Bootstrap	
РАТН	PATH Coefficient SE	T-Value	P-Value	95% LL	95% UL	
ER -> OI -> WES						
Total effect	0.431	0.012	10.020	0.000	0.536	0.530
Direct Effect	0.291	0.060	3.798	0.000	0.320	0.315
Indirect Effect	0.200	0.054	11.194	0.000	0.350	0.301

The path analysis reveals a comprehensive understanding of the relationships among Entrepreneurial Readiness (ER), Open Innovation (OI), and Women Entrepreneurship Success (WES). The total effect indicates a significant positive impact (0.431) of ER on WES, with both direct (0.291) and indirect (0.200) effects contributing substantially. The direct effect signifies that ER has a direct and statistically significant influence on WES. Additionally, the indirect effect, mediated through OI, is even more pronounced, demonstrating a substantial positive impact on WES. The robustness of these findings is supported by bootstrap confidence intervals, with both direct and indirect effects being statistically significant. This suggests that not only does ER independently contribute to WES, but its impact is further enhanced through the mediating role of OI. Overall, these results highlight the intricate interplay between ER, OI, and WES, emphasizing the importance of fostering entrepreneurial readiness and leveraging open innovation strategies to enhance women's entrepreneurial success.

## **Conclusion**

Pakistan grapples with significant unemployment compared to its neighboring nations, and fostering entrepreneurship remains an overlooked strategy for alleviating this issue. This study

delves into the nexus of Entrepreneurial Readiness, Sustainable Human Resources (HR), and Open Innovation, probing their independent effects on Women Entrepreneurial Success in the context of three districts in Southern Punjab, Pakistan. A sample of 300 participants from both urban and rural areas was randomly selected for data collection, analyzed using SPSS v.20 for descriptive and demographic statistics, and SmartPLS v.3 for investigating variable correlations. Employing various tests and analyses, including mediation and moderation analysis, z-test, t-test, Anova-test, multiple regression, correlation, and covariance within Structural Equation Modeling (SEM), the study yields compelling results supporting the acceptance of all four hypotheses, signifying significant correlations among the variables. The findings underscore the pivotal role of entrepreneurship in fostering new businesses, thereby positively impacting the overall economy. Furthermore, empowering women entrepreneurs emerges as a crucial driver for sustainable economic development, potentially catalyzing industrialization and economic progress. This study provides novel insights into the dynamics of entrepreneurial readiness, sustainable HR, and open innovation in the specific context of Southern Punjab, offering valuable recommendations for policymakers to prioritize entrepreneurship as a means to combat unemployment and promote sustainable economic growth.

Muhammad Shaukat Malik: Problem Identification and Model Devolpement,

Maham Shoaib: Supervision and Drafting

Muhammad Raza Zafar: Literature search, Methodology

#### **Conflict of Interests/Disclosures**

The authors declared no potential conflicts of interest in this article's research, authorship, and/or publication.

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