

From Career Barriers to Leadership Aspiration: The Moderating Role of Digital Literacy among Women in Creative MSMEs

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Abstract

Drawing on social cognitive career theory and role congruity theory, this study develops and empirically tests a gendered career advancement model to explain leadership aspirations among women working in creative-industry MSMEs in Malang, Indonesia. The model examines how Gender Stereotype, Organizational Culture, Human Resource Practices, Lack of Mentoring, Work–Family Conflict, and Career Advancement Opportunities influence Women’s Career Advancement, and whether Digital Literacy strengthens the relationship between Women’s Career Advancement and Leadership Aspiration. A quantitative explanatory design was employed using a five-point Likert-scale questionnaire administered to 300 women selected through purposive sampling. Data were analyzed using multiple regression and hierarchical moderation analysis in SPSS 27 with PROCESS Model 1. The results show that Career Advancement Opportunities and Organizational Culture positively and significantly affect Women’s Career Advancement, whereas Gender Stereotype and Work–Family Conflict have significant negative effects. Human Resource Practices and Lack of Mentoring do not demonstrate significant unique effects. Career Advancement Opportunities are the strongest positive predictor, while Gender Stereotype represents the strongest barrier. Women’s Career Advancement positively influences Leadership Aspiration, and Digital Literacy significantly strengthens this relationship. The antecedent model explains 39.8% of the variance in Women’s Career Advancement, while the final moderation model explains 31.0% of the variance in Leadership Aspiration. These findings demonstrate that women’s leadership development requires genuine career opportunities, inclusive organizational cultures, reduced gender stereotypes and work–family pressures, and digital competencies connected to leadership responsibilities. The study positions digital literacy as a boundary condition rather than a direct driver of leadership ambition in small creative enterprises. Because the mediating role of Women’s Career Advancement was not formally tested, the relationships are reported as direct and moderated effects.

Keywords:

Women’s Career Advancement; Leadership Aspiration; Gender Stereotype; Career Advancement Opportunities; Work–Family Conflict; Creative-Industry MSMEs.

1. INTRODUCTION

Creative industries constitute an increasingly important component of contemporary economic systems because they transform ideas, cultural resources, knowledge, and individual creativity into products and

services with commercial and social value. Their development supports employment, innovation, local identity, entrepreneurship, and the digital economy. In Indonesia, the creative economy employed approximately 26.48 million people in 2024, representing 18.30% of the national workforce. West Java, Central Java, and East Java collectively accounted for 57.81% of this employment, demonstrating the strategic concentration of creative economic activities on Java (BPS–Statistics Indonesia, 2025). Despite this economic significance, employment growth does not automatically generate equal access to career progression and leadership, particularly for women working in small and medium-sized creative enterprises.

The gender issue is especially relevant in creative industries because these sectors are frequently characterized by project-based employment, flexible but unpredictable working arrangements, informal recruitment, network-dependent opportunities, and weakly institutionalized career structures. Although creative work is commonly associated with openness, innovation, and merit, women may still encounter exclusion from influential networks, limited access to strategic assignments, gendered evaluations of talent, and unequal recognition of leadership potential. Carr and Van Raalte (2025) identify privileged precarity, the valorization of the “creative genius,” and unequal access to networks and social capital as central issues shaping women’s advancement to leadership in creative industries. They also emphasize that the intersection between creative work, gender, and leadership remains insufficiently examined.

This issue extends beyond the number of women currently occupying leadership positions. It concerns whether women working at lower and middle organizational levels receive the experience, recognition, and opportunities required to perceive leadership as a realistic career destination. A meta-analysis by Netchaeva et al. (2022) found that men continue to report higher leadership aspirations than women and that the size of this difference has not significantly declined over time. The aspiration gap was also larger among working adults in male-dominated industries. These findings indicate that women’s underrepresentation in leadership cannot be explained solely by final promotion decisions. It may develop earlier through cumulative workplace experiences that influence whether women believe that leadership roles are desirable, attainable, and compatible with their lives.

The problem is particularly relevant to Malang, East Java, where micro, small, and medium-sized enterprises form a substantial component of the local economy. Malang City recorded approximately 48,000 MSMEs at the end of 2024, compared with 29,059 recorded across its five sub-districts in 2023, and the municipal registry had reached 21,270 enterprises by August 2024 before the year-end figure was attained; local development programs increasingly emphasize management, marketing, legality, product development, and business upgrading (ANTARA, 2025). The local creative ecosystem covers culinary businesses, fashion and textiles, crafts, design, photography and videography, digital content, printing and publishing, and performing arts. Research on Indonesian women in creative industries also shows that business development is shaped by the interaction of modernization, local culture, financial support, marketing support, and business knowledge (Irijayanti & Lord, 2024), and evidence from East Java indicates that the performance of women-led enterprises depends substantially on the adoption of digital technology (Feranita et al., 2024). However, the expansion of the creative economy does not necessarily mean that women working within these enterprises receive structured career pathways or leadership opportunities.

Compared with large organizations, MSMEs generally have flatter hierarchies, fewer managerial positions, limited human resource specialization, and stronger owner-manager influence. Their employment practices may provide flexibility and direct access to decision makers, but they may also result in unclear promotion criteria, inconsistent employee development, and dependence on informal relationships. Atkinson et al. (2022) caution that strategic human resource management models developed for large organizations cannot be applied uncritically to small firms, where owner-managers dominate organizational decisions and professional HR specialists are frequently absent. Consequently, women’s advancement within creative-industry MSMEs may be determined not only by formal policies but also by organizational culture, interpersonal support, family responsibilities, and access to visible career-building opportunities.

1.1. Theoretical Foundation

The model developed in this study is organized by social cognitive career theory, which explains career behavior as the product of person inputs, contextual supports and barriers, self-efficacy, outcome expectations, and the goals that follow from them (Lent et al., 1994). Its central proposition is that contextual conditions do not act on career goals directly; they act through the individual’s accumulated experience of what is attainable. Applied here, Gender Stereotype, Organizational Culture, Human Resource Practices, Lack of Mentoring, Work–Family Conflict, and Career Advancement Opportunities constitute the contextual supports and barriers; Women’s Career Advancement represents the experienced attainment these conditions produce; and Leadership Aspiration is the resulting career goal. This logic also explains a modeling decision: no direct paths are specified from the six workplace conditions to Leadership Aspiration, because a supportive culture or a formal promotion policy is expected to raise a woman’s ambition to lead only once it has produced recognizable progress in her own career.

The gendered component of the model draws on role congruity theory, which holds that prejudice toward female leaders arises from a perceived incongruity between the communal attributes ascribed to women and the agentic attributes ascribed to leadership roles (Eagly & Karau, 2002). The theory yields two predictions:

women are evaluated less favorably as potential occupants of leadership roles, and leadership behavior performed by women is evaluated less favorably than identical behavior performed by men. Recent evidence is consistent with both, including the incongruity penalties documented in early leadership advancement (Merluzzi & Phillips, 2022) and the persistence of the aspiration gap across six decades of data (Netchaeva et al., 2022). Role congruity theory also clarifies why Organizational Culture is modeled alongside Gender Stereotype rather than as a substitute for it, since culture governs how strongly incongruity is activated in a particular workplace (Salwender et al., 2023).

The moderating position of Digital Literacy follows from the same framework. Social cognitive career theory holds that the translation of attainment into goals depends on whether the individual believes she possesses the capabilities the goal requires. Where creative-industry leadership increasingly involves digital marketing, platform management, online customer relationships, and digitally mediated collaboration, digital capability forms part of what makes a leadership role appear attainable. Digital Literacy is therefore expected to alter the strength of the relationship between Women's Career Advancement and Leadership Aspiration rather than to create that relationship, which is why it is specified as a boundary condition and not as an additional antecedent.

1.2. Conceptualizing Women's Career Advancement and Leadership Aspiration

Within this study, Women's Career Advancement (WCA) refers to women's perceived progress toward career goals, advancement in position or responsibility, and satisfaction with the progress achieved within their organization. This construct is distinguished from Leadership Aspiration (LA), which represents an individual's desire to obtain leadership responsibilities, participate in consequential decision making, and take concrete steps toward leading a team, unit, or organization. The distinction matters theoretically: career advancement describes experienced progress, whereas leadership aspiration represents a future-oriented motivational state. Women may possess leadership potential but gradually reduce their aspirations when their career experience signals limited organizational fit, restricted opportunity, excessive personal cost, or a low probability of advancement.

1.3. Career Barriers, Organizational Support, and Women's Career Advancement

Gender Stereotype is one of the most persistent barriers in this process. Leadership continues to be associated with agency, dominance, assertiveness, and uninterrupted commitment, while women are more frequently expected to demonstrate communal and family-oriented behavior. Such expectations can create unequal standards whereby women must provide stronger evidence of competence before being considered suitable for promotion. Consistent with role congruity theory (Eagly & Karau, 2002), Merluzzi and Phillips (2022) demonstrate that women can experience incongruity penalties in early leadership advancement when their personal or professional characteristics are perceived as inconsistent with gendered leadership expectations. In creative-industry MSMEs, stereotypes may operate subtly through task allocation, judgments of availability, access to customer-facing responsibilities, and assumptions regarding women's readiness to manage financial or strategic decisions.

H1: Gender Stereotype has a negative effect on Women's Career Advancement.

Gender stereotypes are reinforced or weakened through Organizational Culture. A culture that values competence, equality, inclusion, and women's leadership can increase women's sense of organizational fit and willingness to pursue higher responsibilities. Conversely, a culture dominated by informal politics, masculine norms, favoritism, or expectations of constant availability can discourage women even when the organization formally endorses equality. Salwender et al. (2023) found that organizational cultures in which political behavior was perceived as essential for advancement created stronger experiences of lack of fit among women than cultures emphasizing competence. Therefore, organizational culture may determine whether women interpret the workplace as an environment in which advancement is both legitimate and attainable.

H2: Organizational Culture has a positive effect on Women's Career Advancement.

Human Resource Practices constitute a related but distinct organizational mechanism. Transparent promotion criteria, equal access to training, and merit-based performance evaluation should reduce uncertainty and provide women with credible information about how advancement can be achieved. Research in SMEs shows that integrated HR systems can enhance employee capability by encouraging proactive behavior (Zhang & Edgar, 2022). Nevertheless, formal practices may have limited influence when they are inconsistently applied or disconnected from the actual allocation of strategic opportunities. Research on women leaders similarly identifies a gap between organizational policies that ostensibly support women and the informal practices through which promotion, flexibility, and leadership opportunities are distributed (O'Brien et al., 2023). This suggests that the existence of HR practices alone may be less important than their credibility and implementation.

H3: Human Resource Practices have a positive effect on Women's Career Advancement.

Career advancement is also shaped by mentoring and sponsorship. Mentors provide advice, feedback, psychosocial support, and career guidance, whereas sponsors use their influence to recommend individuals for visible assignments and promotion opportunities. The absence of mentoring can restrict women's access to tacit organizational knowledge, influential networks, and information about advancement requirements. Gröschl et al. (2025) show that combined assistive and appreciative sponsorship from superiors and internal or external networks supports women leaders' career advancement. However, mentoring within MSMEs may be highly informal and may occur through owners, senior employees, business communities, or family networks rather than structured organizational programs. This contextual difference makes it necessary to test whether lack of mentoring independently constrains women's advancement after other organizational factors have been considered.

H4: Lack of Mentoring has a negative effect on Women's Career Advancement.

The progression process is further complicated by Work–Family Conflict, understood as inter-role conflict in which the demands of the work role and the family role are mutually incompatible in time, strain, or behavior (Greenhaus & Beutell, 1985).

H5: Work–Family Conflict has a negative effect on Women's Career Advancement.

Career Advancement Opportunities provide a more direct signal that higher responsibility is attainable. These opportunities include clear pathways, realistic promotion possibilities, strategic assignments, decision-making participation, and access to projects that increase visibility and capability. When women receive such opportunities, they can acquire mastery experience, demonstrate competence, build leadership identity, and obtain recognition from influential organizational actors. Indonesian evidence indicates that women's leadership progression is strongly affected by organizational, relational, educational, and sociocultural opportunities and constraints (McLaren et al., 2023). Similarly, participative decision making has been shown to strengthen leadership aspirations, particularly among women who have not yet entered formal leadership roles (Plückelmann et al., 2025). Career opportunities may therefore be more consequential than generalized statements of organizational support because they provide concrete evidence that advancement is possible.

H6: Career Advancement Opportunities have a positive effect on Women's Career Advancement.

1.4. From Career Advancement to Leadership Aspiration

Although these barriers and enablers have been widely discussed, advancement into leadership should not be treated as an automatic consequence of organizational support. Women must first experience meaningful progress before they can view leadership as a viable future role. Women's Career Advancement is therefore positioned in this study as an intervening mechanism connecting workplace conditions with Leadership Aspiration. Progress toward career goals, increased responsibility, and satisfaction with career development can generate self-efficacy, professional identity, visibility, and expectations of further success. In contrast, repeated career stagnation may cause women to revise their aspirations even when they initially possess strong leadership motivation. This mechanism is consistent with recent evidence showing that workplace participation, advancement experience, and credible organizational support influence women's willingness to pursue leadership roles (Netchaeva et al., 2022; Plückelmann et al., 2025).

H7: Women's Career Advancement has a positive effect on Leadership Aspiration.

1.5. The Moderating Role of Digital Literacy

In contemporary creative industries, however, the conversion of career advancement into leadership aspiration may depend on Digital Literacy. Digital literacy refers not only to the ability to operate devices and applications but also to evaluate digital information, communicate and collaborate through digital platforms, protect data, and use technology for workplace decision making. These capabilities are increasingly relevant because creative-industry leadership requires the coordination of digital marketing, electronic commerce, social media, customer analytics, content production, remote collaboration, and platform-based business activities.

Digital competence may strengthen the effect of career advancement on leadership aspiration by increasing women's perceived control, visibility, and readiness for technology-enabled leadership. Nagpal et al. (2023) found that technological savviness enhanced evaluations of women leaders by increasing perceived competence and social status. This suggests that digital capability may provide women with a credible competence signal that helps counter traditional gender stereotypes. Nevertheless, technology is not inherently empowering. Mosseri et al. (2023) identify contrasting experiences of "digital invigoration" and "digital frustration" among women, showing that the consequences of technology depend on employment context, worker agency, and the design of digital systems. Digital literacy is therefore better conceptualized as a boundary condition that determines how effectively women translate career progress into confidence and motivation to lead. Evidence from Indonesian women-led enterprises points in the same direction, showing that the returns to accumulated business resources depend on whether digital technology is actually adopted and used (Feranita et al., 2024).

H8: Digital Literacy positively moderates the relationship between Women's Career Advancement and Leadership Aspiration, such that the relationship becomes stronger as digital literacy increases.

1.6. Research Gaps and Conceptual Model

Despite increasing attention to women and leadership, three major research gaps remain. First, previous research is fragmented across gender stereotypes, organizational culture, HR practices, mentoring, work–family conflict, and career opportunities. These factors are frequently examined separately or within large formal organizations. This fragmentation does not adequately explain their simultaneous and potentially unequal contributions to women's advancement in creative-industry MSMEs, where formal HR structures coexist with owner-manager discretion and informal social relationships. The unresolved question is not merely whether a particular barrier or support matters, but which combination of gendered, organizational, relational, and family-related conditions most strongly shapes women's career progress.

Second, previous studies commonly position career advancement or leadership aspiration as separate outcomes. This approach overlooks the psychological and career-development process through which workplace conditions are converted into motivation to lead. Women's Career Advancement is therefore positioned as a mediating mechanism rather than merely a final indicator of career success. This model explains why a supportive culture or a career opportunity may not directly produce leadership aspiration unless women first experience meaningful progress, expanded responsibility, and confidence in their career trajectory.

Third, existing digitalization research generally treats digital literacy as a direct predictor of technology adoption, employability, entrepreneurial performance, or leadership effectiveness. Less attention has been given to its moderating role in women's career development. An identical level of career progress may produce different leadership aspirations depending on whether women possess the digital capability required to lead within increasingly platform-dependent creative enterprises. Positioning Digital Literacy as a moderator therefore helps explain heterogeneity in the relationship between career advancement and leadership aspiration.

To address these gaps, this study proposes the Gendered Career Advancement–Digital Leadership Aspiration Model. The model examines whether Gender Stereotype, Organizational Culture, Human Resource Practices, Lack of Mentoring, Work–Family Conflict, and Career Advancement Opportunities influence Women's Career Advancement; whether Women's Career Advancement subsequently increases Leadership Aspiration; and whether Digital Literacy strengthens the relationship between Women's Career Advancement and Leadership Aspiration. The model integrates gendered career constraints with organizational support and digitally enabled leadership readiness.

The novelty of this study is reflected in three contributions. First, it integrates six gendered and organizational career determinants into a single explanatory model situated within creative-industry MSMEs. Second, it positions Women's Career Advancement as the central mechanism through which workplace barriers and enablers are translated into Leadership Aspiration. Third, it introduces Digital Literacy as a boundary condition that explains when career advancement is more likely to stimulate women's motivation to lead. The study therefore shifts the discussion from a simple distinction between barriers and support toward a process perspective: organizational and personal conditions shape career progress, career progress shapes leadership aspiration, and digital literacy influence the strength of this conversion.

Accordingly, this study aims to empirically test the proposed model among 300 women working in creative-industry MSMEs in Malang, Indonesia. Specifically, it examines the effects of Gender Stereotype, Organizational Culture, Human Resource Practices, Lack of Mentoring, Work–Family Conflict, and Career Advancement Opportunities on Women's Career Advancement; evaluates the effect of Women's Career Advancement on Leadership Aspiration; and tests the moderating role of Digital Literacy. The study is expected to extend women's leadership, career-development, and creative-industry literature by explaining how gendered and organizational conditions jointly shape the leadership pipeline in small enterprises. Practically, its findings are intended to support MSME owners, business associations, and local governments in designing transparent career pathways, inclusive workplace cultures, mentoring and sponsorship mechanisms, work–family support, strategic assignments, and digital leadership development programs for women.

2. RESEARCH METHOD

This study employed a quantitative explanatory research design to examine the proposed Gendered Career Advancement–Digital Leadership Aspiration Model among women working in creative-industry MSMEs in Malang, Indonesia. An explanatory design was selected because the objective was to test a set of theoretically derived relationships rather than to generate them, and the constructs involved are perceptual states that are most directly accessed through self-report. The design is cross-sectional, so the analysis supports conclusions about association consistent with the proposed ordering rather than about causal sequence over time. The model investigates the effects of Gender Stereotype, Organizational Culture, Human Resource Practices, Lack of Mentoring, Work–Family Conflict, and Career Advancement Opportunities on Women's Career Advancement. It further examines the influence of Women's Career Advancement on Leadership Aspiration,

while Digital Literacy is incorporated as a moderating variable in the relationship between Women's Career Advancement and Leadership Aspiration.

Data were collected using a structured questionnaire measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. The target population consisted of women working in creative-industry MSMEs in Malang City and Malang Regency. A purposive sampling technique was employed with the following criteria: respondents were (1) women aged at least 18 years, (2) domiciled in Malang City or Malang Regency, (3) employed in a creative-industry MSME, and (4) had at least one year of work experience. After screening for eligibility and completeness, 300 valid questionnaires were included in the final analysis.

The instrument was developed in three stages. First, items for each construct were adapted from previously published scales and reworded for women employed in creative-industry MSMEs. Second, the items were administered in Bahasa Indonesia and back-translated into English by two independent bilingual academics to verify semantic equivalence, and the wording was reviewed by [number] experts in human resource management and gender studies to establish content validity. Third, the instrument was pilot-tested on [number] women who were not included in the main sample; the pilot confirmed item clarity and acceptable internal consistency, and minor wording adjustments were made before the main survey was administered.

Data were collected between [month] and [month] [year] through a self-administered questionnaire distributed with the permission of the participating enterprises. Screening questions placed at the beginning of the instrument verified age, domicile, employment in a creative-industry MSME, and length of work experience, and only complete responses meeting all four criteria were retained, producing the final sample of 300 usable responses.

Because every construct was measured by self-report within a single instrument, procedural remedies against common method bias were applied at the design stage. Respondents were assured of anonymity, were informed that no answers were right or wrong, and were presented with the predictor and criterion items in separate sections of the questionnaire so that the hypothesized relationships would not be apparent while responding (Podsakoff et al., 2003). Statistical evidence on common method bias is reported in Section 4.1.2.

The study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Participation was voluntary, the purpose of the study and the intended use of the data were explained before administration, respondents were free to withdraw at any point without consequence, and informed consent was obtained from every participant. The research protocol was approved by [name of the institutional review board, approval number, and date of approval].

All respondents were women, with 52.7% working in Malang City and 47.3% in Malang Regency. The largest age group was 25–34 years (36.0%), and most respondents held bachelor's degrees (47.0%). Respondents represented various creative subsectors, primarily culinary businesses (24.7%), fashion and textiles (20.0%), and crafts (17.3%). Half of the respondents worked as staff or operators, while 27.7% held supervisory or managerial positions. Most respondents worked in MSMEs employing 5–19 workers (58.3%). In addition, 57.7% were married, 68.7% had caregiving responsibilities, and 68.7% had received either formal or informal mentoring. Digital technology was used daily by 70.3% of respondents and several times per week by 25.0%, supporting the relevance of Digital Literacy in the proposed model.

The study measured nine constructs through 27 indicators, with three indicators assigned to each construct. The items were adapted from previously published scales and reworded for the context of women employed in creative-industry MSMEs; the complete item wording and the source from which each scale was adapted are provided in Supplementary Appendix A. Gender Stereotype, Lack of Mentoring, and Work–Family Conflict represented career barriers, whereas Organizational Culture, Human Resource Practices, and Career Advancement Opportunities represented organizational career support. Women's Career Advancement was conceptualized as the mediating mechanism that translates these career conditions into Leadership Aspiration. Digital Literacy was incorporated as a moderating construct to examine whether women's ability to use, evaluate, and communicate through digital technologies strengthens the influence of career advancement on leadership aspiration.

Data analysis was performed using IBM SPSS Statistics 27 and the PROCESS macro (Hayes, 2022). The measurement instrument was evaluated using Corrected Item–Total Correlation and Cronbach's Alpha. The regression model was assessed through normality, multicollinearity, heteroskedasticity, and linearity tests. Multiple regression was used to examine the six antecedents of Women's Career Advancement, while the effect of Women's Career Advancement on Leadership Aspiration was assessed through regression analysis. The moderating effect of Digital Literacy was evaluated through hierarchical regression, entering Women's Career Advancement in the first block, Digital Literacy in the second, and the product term in the third, and was confirmed using PROCESS Model 1 with 5,000 bootstrap resamples and 95% bias-corrected confidence intervals for the conditional effects of Women's Career Advancement at low and high levels of Digital Literacy, following standard simple-slope procedures (Aiken & West, 1991; Hayes, 2022). Women's Career Advancement is positioned conceptually as the mechanism that links workplace conditions to Leadership Aspiration. Its mediating role was not formally tested in the present study, however, because establishing mediation would require bootstrapped indirect effects for each of the six antecedents, and a conditional process model would be required to estimate those indirect effects at different levels of Digital Literacy. The results

are therefore reported as a set of direct and moderated relationships rather than as a tested mediation model, and this constraint is stated explicitly in the limitations.

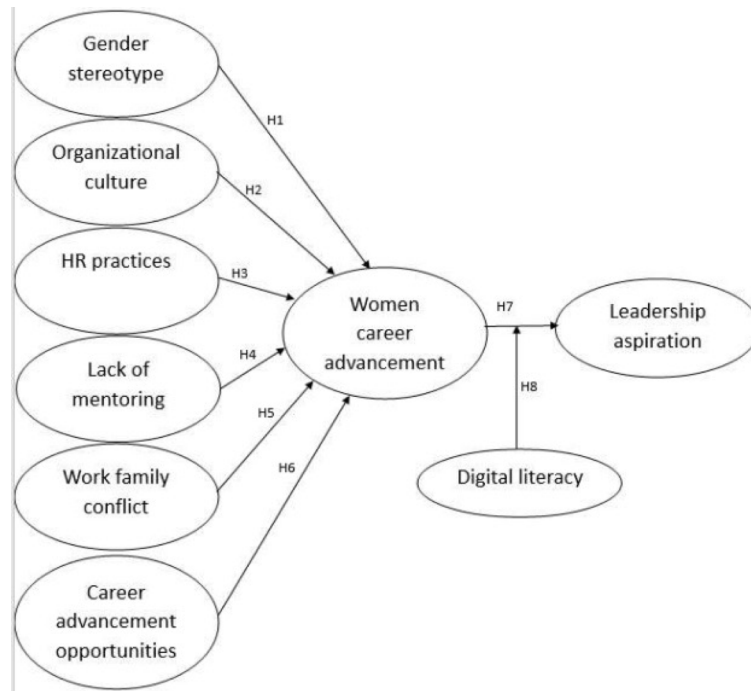


Figure 1. Research Model (Source: Researchers, 2026)

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Characteristic Respondents

The respondents consisted of 300 women working in creative-industry MSMEs in Malang. To ensure sample relevance, respondents were required to be at least 18 years old, domiciled in Malang City or Malang Regency, employed in a creative-industry MSME, and have at least one year of work experience. These criteria ensured that respondents possessed sufficient experience to evaluate organizational practices, career opportunities, work–family conditions, career advancement, leadership aspirations, and digital literacy.

Table 1 shows that 52.7% of respondents worked in Malang City and 47.3% in Malang Regency. The largest age group was 25–34 years (36.0%), followed by 35–44 years (26.0%), indicating that most respondents were in their early or middle career stages. Regarding education, 47.0% held bachelor's degrees, while 29.3% had completed senior high school or vocational education. Respondents represented various creative subsectors, particularly culinary businesses (24.7%), fashion and textiles (20.0%), and crafts (17.3%).

Regarding organizational characteristics, 50.0% worked as staff or operators, 22.3% as senior staff or professionals, 21.7% as supervisors or team leaders, and 6.0% as managers. Most respondents had worked for between one and five years, while 50.3% held permanent employment status. The majority worked in MSMEs employing 5–19 workers (58.3%), confirming that the sample was dominated by relatively small organizational structures.

Family and work characteristics were also relevant to the proposed model. Married respondents accounted for 57.7% of the sample, and 68.7% had caregiving responsibilities involving children, parents, or other family members. Regarding mentoring, 48.0% had received informal mentoring, 20.7% had participated in formal mentoring, and 31.3% had never received mentoring. Digital technology was used daily by 70.3% of respondents and several times per week by 25.0%. Overall, the respondent profile was appropriate for examining how gendered and organizational career conditions influence Women's Career Advancement and Leadership Aspiration, as well as the moderating role of Digital Literacy.

Table 1. Respondent Characteristics

Characteristic	Category	Frequency	Percentage (%)
Gender	Women	300	100.0
Age	18–24 years	48	16.0
	25–34 years	108	36.0
	35–44 years	78	26.0

	45–54 years	44	14.7
	55 years or older	22	7.3
Educational attainment	Senior high school/vocational school	88	29.3
	Diploma	57	19.0
	Bachelor's degree	141	47.0
	Master's degree	14	4.7
MSME location	Malang City	158	52.7
	Malang Regency	142	47.3
Creative-industry subsector	Crafts	52	17.3
	Fashion/textiles	60	20.0
	Culinary	74	24.7
	Design	20	6.7
	Photography/videography	19	6.3
	Digital content	33	11.0
	Printing/publishing	14	4.7
	Performing arts	15	5.0
	Other subsectors	13	4.3
Job level	Staff/operator	150	50.0
	Senior staff/professional	67	22.3
	Supervisor/team leader	65	21.7
	Manager	18	6.0
Organizational tenure	1–<3 years	100	33.3
	3–<5 years	95	31.7
	5–<10 years	76	25.3
	10 years or longer	29	9.7
Employment status	Permanent	151	50.3
	Contract	82	27.3
	Part-time	35	11.7
	Family worker	32	10.7
Number of workers	5–19 workers	175	58.3
	20–49 workers	88	29.3
	50–99 workers	37	12.3
Marital status	Unmarried	110	36.7
	Married	173	57.7
	Divorced/widowed	17	5.7
Caregiving responsibilities	None	94	31.3
	Children	134	44.7
	Parents/other family members	26	8.7
	Children and parents/other family members	46	15.3
Mentoring access	Never received mentoring	94	31.3
	Informal mentoring	144	48.0
	Formal mentoring	62	20.7
Work arrangement	Face-to-face	209	69.7
	Hybrid	63	21.0
Frequency of digital technology use	Remote	28	9.3
	Every day	211	70.3
	Several times per week	75	25.0
	Rarely	14	4.7
Total respondents		300	100.0

Source: Processed questionnaire data, 2026.

3.1.2. Validity, Reliability, and Multicollinearity Tests

Validity and reliability tests were conducted to evaluate the accuracy and internal consistency of the measurement instruments. Indicator validity was assessed using corrected item–total correlations. An indicator was considered valid when its correlation exceeded the recommended threshold of 0.30. Reliability was evaluated using Cronbach's Alpha, with values above 0.60 indicating acceptable internal consistency.

Multicollinearity among the predictors of Women's Career Advancement was examined using tolerance and Variance Inflation Factor (VIF). Tolerance values above 0.10 and VIF values below 10 indicate the absence of problematic multicollinearity.

Table 2. Validity, Reliability, and Multicollinearity Test Results

Variable	Indicator	Corrected Correlation	Item–Total	Cronbach’s Alpha	Tolerance	VIF
Gender Stereotype (GS)	GS1	.838		.908	.959	1.042
	GS2	.802				
	GS3	.807				
Organizational Culture (OC)	OC1	.813		.904	.970	1.031
	OC2	.806				
	OC3	.808				
Human Resource Practices (HRP)	HRP1	.797		.908	.970	1.031
	HRP2	.813				
	HRP3	.838				
Lack of Mentoring (LM)	LM1	.826		.917	.975	1.026
	LM2	.842				
	LM3	.826				
Work–Family Conflict (WFC)	WFC1	.789		.897	.958	1.044
	WFC2	.790				
	WFC3	.813				
Career Advancement Opportunities (CAO)	CAO1	.809		.915	.968	1.033
	CAO2	.826				
	CAO3	.851				
Women’s Career Advancement (WCA)	WCA1	.814		.912	1.000	1.000
	WCA2	.831				
	WCA3	.825				
Leadership Aspiration (LA)	LA1	.796		.891	–	–
	LA2	.777				
	LA3	.784				
Digital Literacy (DL)	DL1	.805		.900	–	–
	DL2	.812				
	DL3	.789				

Source: Processed questionnaire data, 2026.

As presented in Table 2, the corrected item–total correlations range from .777 to .851, exceeding the minimum threshold of .30. Therefore, all 27 indicators are valid and adequately measure their respective constructs.

Cronbach’s Alpha values range from .891 to .917, substantially exceeding the minimum criterion of .60. Lack of Mentoring records the highest reliability value (.917), followed by Career Advancement Opportunities (.915) and Women’s Career Advancement (.912). These results demonstrate strong internal consistency across all constructs.

The tolerance values of the six predictors of Women’s Career Advancement range from .958 to .975, while their VIF values range from 1.026 to 1.044. Women’s Career Advancement, as a predictor of Leadership Aspiration, has a tolerance value of 1.000 and a VIF of 1.000. Thus, no problematic multicollinearity is present, and the dataset is suitable for subsequent regression and moderation analyses. These values also provide a statistical check on common method bias. Because every variable was obtained from a single self-report instrument, the full collinearity values were inspected against the criterion of 3.3, above which collinearity is treated as an indication of common method variance; all values fall between 1.000 and 1.044, far below that threshold. In addition, the significant interaction effect reported in Section 4.1.5 is difficult to attribute to common method variance, because respondents are unlikely to be able to generate an interaction pattern in their answers, and such variance generally attenuates rather than inflates product terms (Siemsen et al., 2010). Together with the procedural remedies described in Section 3, this evidence indicates that common method bias is unlikely to account for the relationships reported below.

3.1.3. Normality Test

The normality test was conducted on the unstandardized residuals of each regression equation using the Kolmogorov–Smirnov test. Residuals were considered normally distributed when the Asymp. Sig. (2-tailed) value exceeded 0.05.

Table 3. Normality Test Results

No.	Regression Equation	Asymp. Sig. (2-tailed)	Critical Value	Description
1	GS, OC, HRP, LM, WFC, CAO → WCA	.200	> .05	Normally distributed

2	WCA → LA	.052	> .05	Normally distributed
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Source: Processed questionnaire data, 2026.

As presented in Table 3, the residuals of the first regression equation, which examines the effects of Gender Stereotype, Organizational Culture, Human Resource Practices, Lack of Mentoring, Work–Family Conflict, and Career Advancement Opportunities on Women’s Career Advancement, produced an Asymp. Sig. value of .200. This value exceeds .05, indicating that the residuals are normally distributed.

The second equation examining the effect of Women’s Career Advancement on Leadership Aspiration produced an Asymp. Sig. value of .052. Although this result is close to the .05 threshold, it remains above the required significance level. Therefore, the residuals of the second regression equation do not significantly deviate from normality.

Overall, both regression equations satisfy the residual normality assumption and are suitable for subsequent regression and hypothesis testing. However, the final moderation equation involving Women’s Career Advancement, Digital Literacy, and their interaction should be tested separately before reporting the moderation results.

3.1.4. T-Test and Regression Coefficients

The t-test and regression coefficient analysis examined the individual effects proposed in the research model. A hypothesis was considered supported when the significance value was below .05 and the coefficient direction corresponded with the proposed relationship. Standardized regression coefficients were used to compare the relative influence of the predictors.

Table 4. T-Test and Regression Coefficient Results

Hypothesis	Variable Relationship	b	t	Sig.	Decision
H1	Gender Stereotype → Women’s Career Advancement	-.381	-8.234	<.001	Supported
H2	Organizational Culture → Women’s Career Advancement	.247	5.367	<.001	Supported
H3	Human Resource Practices → Women’s Career Advancement	.016	.356	.722	Not supported
H4	Lack of Mentoring → Women’s Career Advancement	-.029	-.634	.527	Not supported
H5	Work–Family Conflict → Women’s Career Advancement	-.245	-5.294	<.001	Supported
H6	Career Advancement Opportunities → Women’s Career Advancement	.405	8.798	<.001	Supported
H7	Women’s Career Advancement → Leadership Aspiration	.526	10.688	<.001	Supported
H8	Women’s Career Advancement × Digital Literacy → Leadership Aspiration	.571	3.154	.002	Supported

Source: SPSS Result, 2026.

The results demonstrate that Gender Stereotype has a significant negative effect on Women’s Career Advancement ($b = -.381$; $p < .001$). This indicates that stronger gender-based assumptions regarding women’s leadership suitability are associated with lower perceived career advancement. Organizational Culture has a significant positive effect ($b = .247$; $p < .001$), suggesting that inclusive organizational values and support for women leaders improve women’s career advancement.

Human Resource Practices do not significantly affect Women’s Career Advancement ($b = .016$; $p = .722$). Therefore, H3 is not supported. This result suggests that formal human resource practices have not yet been implemented consistently enough to generate meaningful career advancement for women working in creative-industry MSMEs. Lack of Mentoring also has no significant effect ($b = -.029$; $p = .527$), resulting in the rejection of H4. Limited formal organizational structures in MSMEs may cause women to rely more heavily on informal networks and personal experience than on structured mentoring relationships.

Work–Family Conflict has a significant negative effect on Women’s Career Advancement ($b = -.245$; $p < .001$). Increasing work and family demands therefore restrict women’s ability to pursue higher responsibilities and leadership positions. Conversely, Career Advancement Opportunities have the strongest positive effect on Women’s Career Advancement ($b = .405$; $p < .001$). Clear career pathways, realistic promotion opportunities, and access to strategic assignments are consequently the most influential organizational factors supporting women’s career development.

Women’s Career Advancement has a positive and significant effect on Leadership Aspiration ($b = .526$; $p < .001$). Women who perceive meaningful progress, increased responsibilities, and satisfaction with their career development demonstrate stronger intentions to pursue leadership positions.

The interaction between Women's Career Advancement and Digital Literacy is also significant ($b = .571$; $p = .002$). The interaction increased the explained variance in Leadership Aspiration by 2.3% ($\Delta R^2 = .023$). The relationship between Women's Career Advancement and Leadership Aspiration was stronger among respondents with high digital literacy ($b = .63$) than among respondents with low digital literacy ($b = .35$). Thus, Digital Literacy strengthens the positive effect of Women's Career Advancement on Leadership Aspiration.

Overall, six hypotheses are supported, while H3 and H4 are not supported. These results establish the direct and moderating relationships specified in H1 to H8. They do not establish mediation: although Women's Career Advancement is positioned theoretically as the mechanism linking workplace conditions to Leadership Aspiration, a mediating role cannot be inferred from the significance of the individual regression paths and would require bootstrapped indirect effects estimated within a conditional process model. That analysis is identified in Section 5 as the immediate next step rather than claimed here.

3.1.5. Moderation Analysis

Moderation analysis was conducted to determine whether Digital Literacy strengthens the effect of Women's Career Advancement on Leadership Aspiration. Hierarchical regression analysis was performed by entering Women's Career Advancement in the first model, Digital Literacy in the second model, and the interaction term between Women's Career Advancement and Digital Literacy in the final model.

Table 5. Moderation Analysis Results

Model	Predictors	R	R ²	Adjusted R ²	ΔR^2	F Change	Sig.
1	WCA	.526	.277	.275	.277	114.237	<.001
2	WCA, DL	.535	.286	.282	.009	3.877	.050
3	WCA, DL, WCA $\times$ DL	.556	.310	.303	.023	9.947	.002

Source: SPSS Result, 2026.

The first model shows that Women's Career Advancement explains 27.7% of the variance in Leadership Aspiration. Adding Digital Literacy increases the coefficient of determination to 28.6%, representing an additional contribution of 0.9%.

After the interaction term was included, the R^2 increased from .286 to .310. The interaction contributed an additional 2.3% to the explained variance in Leadership Aspiration ($\Delta R^2 = .023$; F-change = 9.947; $p = .002$). The positive and significant interaction coefficient ($b = .571$; $t = 3.154$; $p = .002$) confirms that Digital Literacy significantly moderates the relationship between Women's Career Advancement and Leadership Aspiration.

The simple-slope results further demonstrate that the effect of Women's Career Advancement on Leadership Aspiration is stronger among women with high Digital Literacy ($b = .63$) than among women with low Digital Literacy ($b = .35$). Therefore, career advancement generates stronger leadership aspirations when women possess greater capabilities to use digital technology, evaluate digital information, and communicate effectively through digital platforms.

Consequently, H8 is supported. Digital Literacy functions as a positive moderator that strengthens the effect of Women's Career Advancement on Leadership Aspiration among women working in creative-industry MSMEs in Malang.

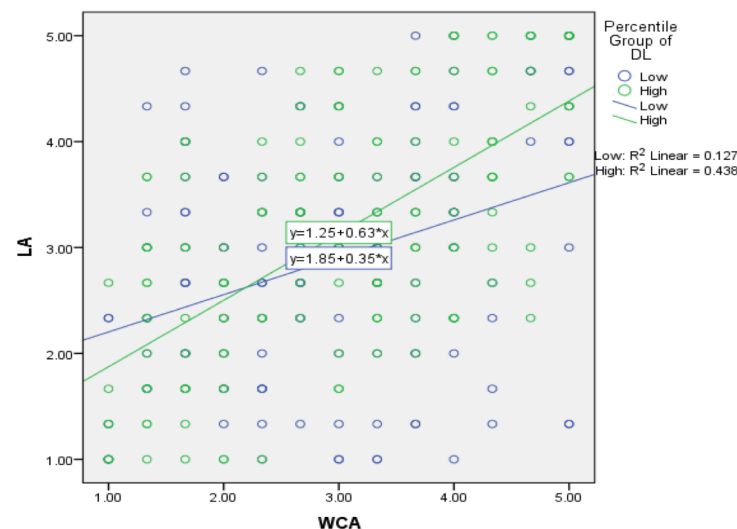


Figure 2. Moderating Effect of Digital Literacy on the Relationship between Women's Career Advancement and Leadership Aspiration (Source: SPSS Result, 2026)

Figure 2 illustrates the interaction between Women's Career Advancement and Digital Literacy in predicting Leadership Aspiration. The regression line for respondents with high Digital Literacy is steeper, with the equation $LA = 1.25 + 0.63WCA$, compared with $LA = 1.85 + 0.35WCA$ for respondents with low Digital Literacy. Thus, every one-unit increase in Women's Career Advancement is associated with a .63-unit increase in Leadership Aspiration among women with high Digital Literacy, compared with only a .35-unit increase among women with low Digital Literacy.

The explanatory power of Women's Career Advancement is also substantially greater in the high-Digital Literacy group ($R^2 = .438$) than in the low-Digital Literacy group ($R^2 = .127$). This indicates that Women's Career Advancement explains 43.8% of the variation in Leadership Aspiration among respondents with high Digital Literacy, but only 12.7% among respondents with low Digital Literacy.

The two regression lines intersect at a relatively low level of Women's Career Advancement. Beyond this point, the difference in Leadership Aspiration between the two Digital Literacy groups becomes increasingly pronounced. At higher levels of career advancement, women with high Digital Literacy demonstrate substantially stronger Leadership Aspiration than women with low Digital Literacy. Conversely, Digital Literacy alone does not automatically produce high Leadership Aspiration when perceived career advancement remains limited.

Overall, Figure 2 confirms an amplifying moderation pattern. Digital Literacy enables women to translate career progress into stronger leadership ambitions by improving their ability to access information, develop professional networks, communicate through digital platforms, and identify leadership opportunities. This visual evidence is consistent with the significant interaction coefficient ($b = .571$; $p = .002$), thereby providing additional support for H8.

3.2. Discussion

This study explains Women's Career Advancement and Leadership Aspiration among 300 women working in creative-industry MSMEs in Malang. Six of the eight hypotheses were supported. Gender Stereotype and Work-Family Conflict negatively influenced Women's Career Advancement, whereas Organizational Culture and Career Advancement Opportunities had positive effects. Human Resource Practices and Lack of Mentoring did not demonstrate significant unique effects. Women's Career Advancement positively influenced Leadership Aspiration, while Digital Literacy strengthened this relationship. Collectively, the six antecedents explained 39.8% of the variance in Women's Career Advancement. The final moderation model explained 31.0% of the variance in Leadership Aspiration.

Gender Stereotype had a significant negative effect on Women's Career Advancement ($b = -.381$; $p < .001$), supporting H1. This result indicates that women experience weaker career progress when leadership positions are perceived as more appropriate for men, women are expected to demonstrate greater competence than men, and traditional gender roles continue to influence promotion decisions. Such stereotypes create a perceived lack of fit between femininity and leadership, potentially limiting women's access to authority, strategic assignments, and career recognition. This finding is consistent with Tabassum and Nayak (2021), who identified gender stereotypes as persistent barriers to women's career progression. It also aligns with Feldberg (2022), who demonstrated that stereotype-related pressures can influence how women perform managerial work and establish their legitimacy. In the context of creative MSMEs, apparently informal assumptions about who is suitable to lead may therefore be more consequential than formally stated equality principles.

Organizational Culture positively influenced Women's Career Advancement ($b = .247$; $p < .001$), supporting H2. Women reported stronger career progress when organizational values supported equal opportunities, recognized women's leadership capabilities, and created an inclusive environment for pursuing higher responsibilities. The result indicates that culture operates as a social signal that informs women whether leadership advancement is realistic and institutionally supported. Salwender et al. (2023) similarly found that organizational cultures emphasizing political behavior rather than demonstrated competence produce stronger lack-of-fit experiences among women. Furthermore, Mousa et al. (2023) showed that organizational practices advance women more effectively when they are supported by a conducive culture that challenges gendered leadership expectations. Thus, equality values must become observable norms rather than symbolic organizational statements.

Human Resource Practices did not significantly influence Women's Career Advancement ($b = .016$; $p = .722$), leading to the rejection of H3. This result does not mean that transparent promotion, equal training, and merit-based evaluation are unimportant. Instead, these practices did not explain additional variance in career advancement after the effects of culture, stereotypes, work-family conflict, and career opportunities were considered. The respondent profile may help explain this finding: 58.3% worked in MSMEs with only 5–19 employees, while only 6.0% occupied managerial positions. Small organizational structures commonly have short hierarchies, limited promotion levels, and informal personnel management. Harney et al. (2022) emphasize that HR management in SMEs is frequently informal, resource-constrained, and highly dependent on owner-manager discretion. Consequently, HR practices may exist nominally but may not be sufficiently formalized, consistently implemented, or connected to actual advancement decisions. Three further readings are warranted before this result is interpreted as evidence of irrelevance. First, the coefficient estimates a unique effect: it indicates that Human Resource Practices explain no additional variance once culture, stereotypes,

work–family conflict, and career opportunities are held constant, which is a different claim from the absence of any association. The zero-order correlations, reported in Supplementary Appendix B, are the appropriate basis for that weaker claim. Second, with 300 respondents and six predictors, the analysis has adequate power to detect small effects, so the non-significant coefficient is informative rather than merely inconclusive. Third, Career Advancement Opportunities and Human Resource Practices are conceptually adjacent, and the former may capture the observable component of the latter: a promotion policy becomes visible to an employee largely through the promotion opportunities it produces. On this reading, the result locates the operative mechanism in observable opportunity rather than in formal policy.

This nonsignificant result also suggests a policy–implementation gap. Formal promotion criteria or training access will have limited influence when women cannot observe actual promotion opportunities or when informal gender expectations continue to shape decisions. O’Brien et al. (2023) similarly identified a disconnect between organizational policies intended to support women and the gendered informal practices encountered during career progression. For creative-industry MSMEs, the strategic issue is therefore not simply whether HR policies exist, but whether they generate visible, credible, and equitable career outcomes.

Lack of Mentoring also had a negative but nonsignificant effect on Women’s Career Advancement ($b = -.029$; $p = .527$), resulting in the rejection of H4. Only 20.7% of respondents had accessed formal mentoring, while 48.0% relied on informal mentoring and 31.3% had never received mentoring. This pattern indicates that mentoring relationships within these MSMEs are predominantly informal and may provide emotional guidance without offering sponsorship, access to decision-makers, or recommendations for promotion. Mentoring may therefore be insufficient to alter career outcomes unless it is connected to strategic opportunities and organizational authority. The construction of the variable also deserves scrutiny. Lack of Mentoring was measured as a perceived deficit rather than as the presence, intensity, or type of mentoring received, and 48.0% of respondents reported informal mentoring, which compresses the variable toward a narrow range and reduces its capacity to discriminate between respondents. The distinction between mentoring and sponsorship is relevant here: mentoring supplies advice, whereas sponsorship supplies advocacy, and only the latter carries the organizational authority that converts guidance into advancement (Gröschl et al., 2025). A measure of perceived mentoring deficit would not capture that distinction.

The finding should not be interpreted as evidence that mentoring has no career value. Moake et al. (2023) found that mentoring outcomes depend on contextual conditions, including management aspirations and career interruptions. Similarly, Mousa et al. (2023) emphasize that mentoring requires organizational structure and access to influential leaders to effectively shape career opportunities. In the present model, Career Advancement Opportunities may have captured the more concrete organizational resources that informal mentoring failed to provide. Therefore, mentoring in creative MSMEs needs to move beyond general advice toward sponsorship, strategic assignment, network access, and explicit career advocacy.

Work–Family Conflict negatively influenced Women’s Career Advancement ($b = -.245$; $p < .001$), supporting H5. This finding is particularly relevant because 57.7% of respondents were married and 68.7% had children, dependent parents, or both. Competing work and caregiving responsibilities may reduce the time, energy, mobility, and schedule flexibility required to accept demanding assignments or prepare for leadership responsibilities. The result is consistent with Adu et al. (2023), who found that family–work conflict negatively affected women’s career progression. It also supports Bear (2021), whose findings showed that temporal flexibility could strengthen women’s promotion aspirations by reducing anticipated work–family conflict. Work–family conflict should therefore be treated as a structural career constraint rather than merely a private family issue.

Career Advancement Opportunities had the strongest positive effect on Women’s Career Advancement ($b = .405$; $p < .001$), supporting H6. Clear career pathways, realistic advancement opportunities, and access to strategic assignments provide tangible evidence that women can progress within an organization. Unlike general HR practices, these opportunities directly expose women to higher-level responsibilities and allow them to demonstrate leadership capabilities. Research involving Indonesian women similarly shows that career progression depends on capacity development, professional relationships, supportive workplaces, and access to advancement opportunities (McLaren et al., 2023). The result indicates that creative MSMEs should prioritize opportunity architecture: women need visible advancement pathways and leadership-relevant experience, not only generic training programs.

Women’s Career Advancement had a strong positive effect on Leadership Aspiration ($b = .526$; $p < .001$), supporting H7. Women who perceive meaningful progress toward their career goals, increased responsibilities, and satisfaction with their career development are more likely to seek positions involving leadership and strategic decision-making. Career progress provides mastery experiences and recognition that reinforce leadership identity and perceived readiness to lead. This interpretation is consistent with Plückelmann et al. (2025), who found that participation in organizational decision-making was positively associated with leadership aspirations and was particularly beneficial for women in non-leadership positions. Career advancement consequently operates not only as an employment outcome but also as a psychological foundation for future leadership ambition.

Digital Literacy positively moderated the relationship between Women’s Career Advancement and Leadership Aspiration ($b = .571$; $p = .002$), supporting H8. Introducing the interaction term increased the

explained variance by 2.3% ($\Delta R^2 = .023$). Although this incremental effect is relatively small, it is statistically meaningful. The simple-slope analysis showed that the relationship was stronger among women with high Digital Literacy ($b = .63$; $R^2 = .438$) than among women with low Digital Literacy ($b = .35$; $R^2 = .127$). Therefore, women with stronger digital capabilities are more effective in converting career progress into leadership ambition.

Digital Literacy may strengthen this relationship by enabling women to develop professional networks, obtain business information, communicate their achievements, manage digital work processes, and demonstrate competencies increasingly associated with contemporary leadership. Nagpal et al. (2023) found that technological competence improves evaluations of women's leadership effectiveness because technologically capable women are perceived as more competent and accorded greater status. Similarly, de Villiers Scheepers et al. (2024) conceptualize digital career competencies through digital connectedness, career management, and digitally mediated work opportunities. These capabilities are particularly relevant to creative MSMEs, where market access, customer communication, content development, and business collaboration increasingly rely on digital platforms.

The moderation graph provides an important qualification. At low levels of Women's Career Advancement, high Digital Literacy does not automatically produce stronger Leadership Aspiration. However, as career advancement increases, the slope for highly digitally literate women becomes substantially steeper. Digital Literacy therefore functions as an amplifier of career resources rather than a substitute for career opportunities. Training women in digital skills without providing access to meaningful responsibilities is unlikely to create leadership ambition on its own.

Overall, the findings show that women's career advancement in creative-industry MSMEs is shaped more strongly by visible opportunities, gender-related expectations, organizational culture, and work-family conditions than by formal HR practices or informal mentoring alone. The study contributes by demonstrating that Women's Career Advancement connects organizational experiences with Leadership Aspiration, while Digital Literacy determines how strongly career progress is translated into leadership ambition. Practically, MSMEs should establish visible career pathways, assign women to strategic projects, evaluate promotion decisions for gender bias, provide flexible work arrangements, convert mentoring into career sponsorship, and integrate digital competence into leadership development.

3.2.1. Theoretical Implications

The study makes three theoretical contributions. First, it supplies an empirical test of the social cognitive career theory proposition that contextual supports and barriers reach career goals through experienced attainment rather than directly. The six workplace conditions were modeled as acting on Leadership Aspiration only by way of Women's Career Advancement, and the pattern of results is consistent with that specification: the conditions that shaped career advancement most strongly were those that produce observable attainment, namely visible opportunity and an inclusive culture, rather than those that exist as formal provision. Second, the results refine role congruity theory in a setting that theory has rarely addressed. Creative-industry MSMEs are informal, flat, and project-based, and might be expected to attenuate role incongruity; instead, Gender Stereotype was the strongest negative predictor in the model. This suggests that incongruity operates through interpersonal judgment rather than through formal hierarchy, and that the absence of bureaucratic structure removes the procedural safeguards that might otherwise constrain it. Third, the study specifies digital capability as a boundary condition in women's career development rather than as a direct antecedent, and the moderation pattern supports that specification: digital literacy did not generate leadership aspiration where career advancement was low, but amplified it substantially where career advancement was high.

Taken together, these contributions reposition the question. The literature has tended to ask which barriers and supports matter for women's advancement. The present results suggest a prior question of how workplace conditions become visible to the women they affect, since the conditions that mattered empirically were precisely those that a woman can observe in her own trajectory. This reframing is where the informal MSME setting is most instructive, because it strips away the formal machinery through which larger organizations signal commitment and leaves only what is actually experienced.

3.2.2. Practical Implications

The results translate into a sequence rather than a list. In the immediate term, owner-managers can make advancement visible at low cost by naming the roles that exist above each position, stating what distinguishes them, and assigning at least one woman to a strategic project with client contact or budget responsibility each cycle, since Career Advancement Opportunities was the strongest positive predictor in the model and visibility, not expenditure, is the operative mechanism. In the medium term, promotion decisions should be reviewed against stated criteria by someone other than the deciding owner-manager, because Gender Stereotype was the strongest negative predictor and informal structures offer no procedural check against it. Flexible scheduling, predictable deadlines, and protection of non-working hours address Work-Family Conflict directly and are feasible in enterprises of the size studied, where 68.7% of respondents carried caregiving responsibilities.

Two further implications follow from the results that were not significant. Because formal Human Resource Practices explained no unique variance, investment in written policy should be deferred until the

opportunities such policy governs actually exist; a promotion procedure has no effect where there is nothing to be promoted into. Because perceived mentoring deficit likewise explained no unique variance while sponsorship did not form part of the model, existing informal mentoring should be converted into advocacy, by asking mentors to recommend named women for specific assignments rather than to offer general guidance. Finally, digital training should be delivered alongside responsibility rather than in advance of it: the moderation pattern indicates that digital skill raises leadership ambition only among women who are already experiencing career progress, so a digital skills program run in isolation from career architecture is unlikely to change aspiration.

4. CONCLUSION

This study examined the factors associated with Women's Career Advancement and Leadership Aspiration among 300 women working in creative-industry MSMEs in Malang. Six of the eight hypotheses were supported. Gender Stereotype and Work-Family Conflict showed significant negative effects on Women's Career Advancement, whereas Organizational Culture and Career Advancement Opportunities demonstrated significant positive effects. Career Advancement Opportunities emerged as the strongest positive predictor, while Gender Stereotype was the strongest negative predictor. Human Resource Practices and Lack of Mentoring did not have significant unique effects after the other predictors were considered.

Women's Career Advancement had a strong positive effect on Leadership Aspiration. Women who perceived greater progress, responsibility, and satisfaction in their careers demonstrated stronger aspirations to obtain leadership and decision-making positions. Digital Literacy strengthened this relationship, as the association between Women's Career Advancement and Leadership Aspiration was stronger among women with high Digital Literacy than among those with low Digital Literacy. Digital Literacy therefore functions as an enabling capability that helps women translate career progress into stronger leadership ambition, rather than as a substitute for career opportunities.

The findings indicate that creative-industry MSMEs should prioritize transparent career pathways, equitable access to strategic assignments, inclusive organizational cultures, and mechanisms for identifying gender bias in advancement decisions. Flexible work arrangements are also necessary to reduce work-family pressures. Although Human Resource Practices and Lack of Mentoring were not significant, these mechanisms should not be abandoned. Instead, HR practices must be implemented consistently, while mentoring should be developed into sponsorship that provides career advocacy, professional networks, and access to leadership opportunities. Digital competence development should also be integrated with strategic assignments and leadership preparation.

This study is limited in six respects. First, the cross-sectional design supports conclusions about associations consistent with the proposed ordering but not about causal sequence over time. Second, all constructs were measured by self-report from a single respondent group; although the procedural remedies and the collinearity evidence reported in Section 4.1.2 suggest that common method bias is not a serious concern, behavioral indicators such as recorded promotions would strengthen the evidence. Third, purposive sampling in two adjacent administrative areas limits generalizability, and the sample is concentrated in particular segments, with half the respondents at staff or operator level and 58.3% in enterprises of fewer than 20 workers. Fourth, each of the nine constructs was measured with three indicators, which is efficient in a field survey but leaves limited room to represent constructs as broad as Organizational Culture or Human Resource Practices; the non-significant results for Human Resource Practices and Lack of Mentoring should be read with that constraint in mind. Fifth, the model specifies six antecedents, one intervening construct, and one moderator, and this breadth was achieved by estimating the relationships in separate regression blocks rather than simultaneously, so the estimates do not account for covariance across the whole system. Sixth, and most consequentially, Women's Career Advancement is positioned theoretically as a mediator but its mediating role was not formally tested. Future studies should employ longitudinal designs, include objective career and promotion data, and compare women across MSME sectors and geographical regions. The immediate next step, which the present data already permit, is to estimate a conditional process model (PROCESS Model 14) in which the indirect effects of the six antecedents on Leadership Aspiration through Women's Career Advancement are tested with bootstrapped confidence intervals at low, mean, and high levels of Digital Literacy. Until that index of moderated mediation is reported, the mechanism proposed in this study should be regarded as theoretically specified and empirically consistent, but not yet demonstrated.

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Author contributions. A.R. conceptualized the study and developed the model; E.L.K. designed the instrument and supervised data collection; N.R. conducted the statistical analysis. All authors contributed to drafting and revising the manuscript and approved the final version.

Conflict of interest. The authors declare no competing financial or personal interests that could have influenced the work reported in this article.

Ethics statement. The study was conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from all participants, and the research protocol was approved by [institutional review board, approval number, and date of approval].

Data availability. The dataset generated and analyzed during this study is available from the corresponding author upon reasonable request.

Supplementary materials. Appendix A reports the complete questionnaire items and the source of each adapted scale; Appendix B reports the descriptive statistics and the zero-order correlation matrix for all nine constructs; and Appendix C reports the full SPSS regression and moderation output. These files are submitted together with the manuscript.

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