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Intersecting Structures and Gendered Perceptions in Entrepreneurship: A Life-Course Comparison of Institutional Inclusivity in Italy and the United Kingdom

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ABSTRACT

Using Global Entrepreneurship Monitor (GEM) 2024 data for Italy and the United Kingdom, this study examines how gender gaps in entrepreneurial perceptions, measured as perceived entrepreneurial skills and fear of failure, vary across age and education within contrasting institutional regimes. Drawing on a life-course institutional framework, we test whether cumulative disadvantage and institutional moderation shape gendered perceptual trajectories differently in a coordinated market economy (Italy) and a liberal market economy (United Kingdom). Across both countries, men report higher perceived entrepreneurial skills and lower fear of failure, but patterns diverge over the life course. In the United Kingdom, gender gaps tend to narrow with age, whereas in Italy they persist or widen, particularly among highly educated individuals approaching retirement. Although sustainability orientation is not directly measured, the findings suggest that institutionally shaped gender gaps may indirectly influence inclusive participation in entrepreneurial ecosystems. These results highlight the importance of institutional flexibility and second-chance norms in shaping gendered access to entrepreneurial activity.

1 | Introduction

Why do gender gaps in perceptions of entrepreneurial skills and risk persist in some contexts yet narrow in others? Gender and work research has long shown that women face systematic disadvantages in how their skills are recognised and how their failures are judged (Ridgeway 2011; Ahl and Marlow 2012). In entrepreneurship, these disadvantages are reflected in lower reported self-efficacy and higher fear of failure among women compared to men (Koellinger et al. 2013; Shinnar et al. 2012). These perceptual gaps matter because they shape access to entrepreneurial careers, influence persistence and exit patterns and reproduce gendered inequalities in economic life

(Marlow and McAdam 2013; Jennings and Brush 2013; Henry et al. 2016).

These gaps may also have implications for how individuals access and engage with entrepreneurial activity within broader economic systems. Entrepreneurial participation is widely recognised as relevant to innovation systems, including sustainability-oriented activity (Tiba et al. 2020; Severo et al. 2018). While prior studies have examined gender dynamics in sustainability-oriented entrepreneurial activity (e.g., Fertó and Bojnec 2024, 2025), the present study does not analyse sustainability outcomes directly and instead focuses on the institutional and life-course mechanisms that shape gendered access to entrepreneurial

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agency. Accordingly, any implications for broader system dynamics should be interpreted as indirect and remain outside the empirical scope of this analysis.

Too often, gender differences in entrepreneurial perceptions are treated as fixed psychological traits. We argue instead that they are socially produced and institutionally embedded. Two dynamics are central. First, perceptions of capability and risk are career-stage dependent: they evolve as individuals accumulate education, navigate employment transitions and take on family responsibilities (Elder et al. 2003; Correll 2004). For women, these trajectories are mediated by stereotype-consistent feedback (Steele 1997), limited access to mastery experiences (Gupta et al. 2009) and gendered expectations around competence (Lewis 2006).

Second, perceptions are conditioned by institutional environments. Labour markets, welfare regimes and cultural scripts about failure shape the reputational and material penalties that individuals anticipate when considering entrepreneurial action (Hall and Soskice 2001; Jackson and Deeg 2008; Mandel and Shalev 2009). In coordinated market economies such as Italy, where credentialism and rigid labour structures prevail, such penalties may be more enduring. In liberal market economies such as the United Kingdom, characterised by greater flexibility and stronger second-chance norms, they may be less binding (Fagan and Rubery 2017).

In this article, we theorise entrepreneurial self-efficacy and fear of failure as gendered trajectories shaped jointly by life-course experiences and institutional contexts. We therefore examine how gender gaps in entrepreneurial perceptions vary across age and education, and whether these patterns differ between Italy and the United Kingdom.

Our contribution is threefold. First, we develop a life-course institutional framework that integrates cumulative disadvantage, gendered reputational penalties and institutional moderation. Second, we provide an empirical test of this framework using harmonised GEM 2024 microdata for Italy and the United Kingdom. Third, we show that education does not uniformly equalise gender gaps: in the United Kingdom, gaps compress with age, whereas in Italy they persist or widen, particularly among highly educated women approaching retirement. By situating entrepreneurial perceptions within institutional opportunity structures, the study advances research at the intersection of gender, work and entrepreneurship. It also identifies policy-relevant levers, such as second-chance norms and mid-career support, that may reduce institutional penalties and broaden inclusive participation in entrepreneurial ecosystems (Brush et al. 2019).

2 | Gendered Entrepreneurial Perceptions Across the Life Course: Conceptual Framework and Hypotheses

Entrepreneurial perceptions are shaped by both individual experience and structural context. Women consistently report lower perceived entrepreneurial skills and higher fear of failure than men (Koellinger et al. 2013; Shinnar et al. 2012). Rather than interpreting these differences as fixed psychological traits, we

conceptualise them as socially embedded perceptions that evolve over time and are conditioned by institutional environments.

We develop a life-course institutional framework centred on three mechanisms: cumulative disadvantage in perceived capability, gendered reputational penalties reflected in fear of failure and institutional moderation across capitalist regimes.

2.1 | Life-Course Dynamics and Cumulative Disadvantage

Perceptions of entrepreneurial skills are not static. They develop through mastery experiences, social feedback and access to opportunity (Bandura 1997; McGee et al. 2009). Educational attainment, employment trajectories and family responsibilities shape exposure to such experiences across the life course (Elder et al. 2003; Correll 2004). When recognition and validation are unevenly distributed across genders, small early asymmetries may accumulate.

Gendered expectations regarding competence and leadership can influence how similar achievements are interpreted (Ridgeway 2011). Stereotype-consistent feedback may restrict women's access to high-visibility tasks and entrepreneurial role models, limiting the reinforcement of perceived capability (Gupta et al. 2009). Over time, these processes can produce widening confidence gaps, even among individuals with comparable or superior formal qualifications.

Educational attainment plays a central role in this process. Higher education may provide additional opportunities for mastery, yet it may also raise reputational stakes and visibility, potentially intensifying asymmetries in recognition. We therefore expect gender differences in perceived entrepreneurial skills to vary systematically across age and education.

H1. *Cumulative disadvantage: The gender gap in perceived entrepreneurial skills increases with age and education.*

2.2 | Gendered Reputational Penalties and Fear of Failure

Fear of failure reflects anticipated social and economic consequences of unsuccessful entrepreneurial action (Arenius and Minniti 2005; Cacciotti et al. 2016). These anticipated penalties are not neutral. Gender norms influence how failure is judged and how quickly reputations can be restored (Ahl 2006; Ahl and Marlow 2012; Ridgeway 2011).

Women may face stricter scrutiny and lower tolerance for visible failure, particularly in contexts where entrepreneurial risk-taking is culturally coded as masculine. As professional status and educational attainment increase, the perceived costs of failure may rise disproportionately for women, reinforcing caution in later career stages.

Fear of failure thus represents not merely an emotional barrier but a socially structured assessment of reputational risk. We therefore expect gender gaps in fear of failure to persist or widen with age and education.

H2. *Gendered penalties: The gender gap in fear of failure persists or widens with age and education.*

2.3 | Institutional Moderation: Varieties of Capitalism

Life-course processes unfold within institutional contexts that structure opportunity and risk. Varieties-of-capitalism theory distinguishes between liberal market economies (LMEs) and coordinated market economies (CMEs), which differ in labour-market flexibility, employment protection and norms regarding failure (Hall and Soskice 2001; Jackson and Deeg 2008; Mandel and Shalev 2009).

In coordinated market economies such as Italy, stronger employment protection, credentialism and familistic welfare arrangements may heighten reputational penalties and limit recovery following entrepreneurial setbacks. In liberal market economies such as the United Kingdom, more flexible labour markets and stronger second-chance norms may reduce the long-term consequences of failure and allow reputations to recover more easily.

These institutional differences are likely to moderate gendered life-course trajectories. In more flexible regimes, gender gaps in perceived entrepreneurial skills and fear of failure may attenuate over time. In more rigid regimes, cumulative disadvantage and reputational penalties may remain entrenched.

H3. *Institutional moderation: Gender gaps in perceived entrepreneurial skills and fear of failure compress with age in the UK but persist or widen in Italy.*

2.4 | Education as a Structural Axis of Stratification

Intersectionality theory emphasises that gender interacts with other structural positions to shape opportunity and constraint (Crenshaw 1991). While the available data do not allow full intersectional analysis across multiple identities, this study treats educational attainment as a key structural axis through which gendered inequalities are stratified.

Education influences career trajectories, income prospects, visibility and exposure to reputational risk. By examining how gender gaps vary across educational tiers within different institutional regimes, we capture one dimension of stratified opportunity while acknowledging that other intersecting identities (e.g., ethnicity, migration background) remain beyond the scope of the present analysis.

2.5 | Sustainability as Contextual Implication

Entrepreneurial participation contributes to broader innovation systems, including sustainability-oriented activity. If institutional contexts amplify gendered gaps in perceived entrepreneurial skills or risk, they may indirectly shape who enters entrepreneurship and whose ideas are realised. Recent empirical work further indicates that gender equality is associated with differences in the adoption and intensity of green and sustainability-oriented

entrepreneurial practices, including in agricultural and rural contexts (Fertő and Bojnec 2025). This study does not measure sustainability orientation directly; rather, it focuses on the perceptual preconditions that may influence inclusive participation in entrepreneurial ecosystems.

2.6 | Summary of Theoretical Framework

In sum, we propose a life-course institutional framework integrating three mechanisms: cumulative disadvantage in perceived entrepreneurial skills, gendered reputational penalties reflected in fear of failure, and institutional moderation across capitalist regimes. Using GEM 2024 microdata for Italy and the United Kingdom, we test whether gender gaps in entrepreneurial perceptions evolve differently across age and education within contrasting institutional contexts.

3 | Data and Methods

Building on the life-course institutional framework developed above, our empirical strategy examines how gendered entrepreneurial perceptions, operationalised as perceived entrepreneurial skills (SUSKILL) and fear of failure (FoF), vary across age and education within two contrasting institutional regimes. Specifically, we test whether cumulative disadvantage, gendered reputational penalties and institutional moderation are reflected in nationally representative data from the Global Entrepreneurship Monitor (GEM) (2024) for Italy and the United Kingdom.

The analysis relies on microdata from the GEM Adult Population Survey (APS) 2024. GEM is the most extensive comparative survey of entrepreneurship worldwide, conducted annually since 1999 across more than 50 economies. It provides harmonised, nationally representative samples of adults aged 18–64. The 2024 wave includes approximately 2000 respondents per country for both Italy and the United Kingdom. GEM has been widely used to study entrepreneurial perceptions and behaviour, including gender gaps in self-efficacy, fear of failure and sustainability orientation (Koellinger et al. 2013; Shinnar et al. 2012; GEM 2024).

Our analysis focuses on two perception-based outcomes. Fear of failure (FoF) is measured on a five-point Likert scale in response to the item: “Fear of failure would prevent me from starting a business.” Perceived entrepreneurial skills (SUSKILL) are measured with the item: “You have the knowledge, skill and experience required to start a new business,” also on a five-point scale. Both measures are well established in entrepreneurship research as indicators of perceived entrepreneurial skills and perceived risk-related deterrence. In order to assess robustness, each variable is analysed in two ways: first as a continuous 1–5 scale and second as a dichotomous indicator capturing high endorsement (≥ 4), following established practice in the literature.

Life-course dynamics are approximated using five age bands commonly employed in entrepreneurship research: 18–24 (youth), 25–34 (young adult), 35–44 (mid-career), 45–54 (mature adult) and 55–64 (pre-retirement). These categories allow comparison across distinct career stages while maintaining sufficient cell sizes for reliable estimation.

Education is harmonised across national systems using GEM's country-specific coding aligned to ISCED classifications. In Italy, low corresponds to ISCED 0–2, medium to ISCED 3–4 and high to ISCED 5+. In the United Kingdom, GEM records education using national qualification levels but maps them internally to equivalent ISCED categories. In the harmonised GEM coding used here, low corresponds to UK levels 7–8 (lower secondary or below), medium to levels 4–6 (upper secondary and vocational qualifications), and high to levels 1–3 (post-secondary and tertiary qualifications). Importantly, the numbering of UKREduc in the GEM dataset differs from the conventional public presentation of UK qualification levels. In the GEM 2024 codebook, levels 1–3 correspond to tertiary qualifications (bachelor's, master's, doctorate), whereas levels 7–8 represent lower secondary education or below. Our recoding follows this official GEM classification and ensures correct alignment with ISCED-equivalent categories for cross-national comparison. Respondents coded as “refused,” “don't know,” or “other” were excluded from the analysis.

Gender follows GEM's binary coding (1 = male; 2 = female). While this operationalisation does not capture non-binary or gender-diverse identities, it reflects the structure of the available dataset. We acknowledge this limitation and interpret gender differences accordingly. The binary classification is consistent with prior GEM-based analyses of gender and entrepreneurship (Jennings and Brush 2013). Although intersectionality theory recognises that gender interacts with class, ethnicity and caregiving status, the GEM dataset does not yet allow full operationalisation of these dimensions. All analyses apply GEM post-stratification weights to ensure national representativeness.

Because the analysis cross-classifies respondents by country, age group, education tier and gender, some cells contain relatively small numbers of observations, particularly low-educated youth in the United Kingdom. These cases are reported transparently in Appendix A. Estimates for sparsely populated cells are interpreted cautiously, and substantive conclusions are drawn from patterns that remain consistent across well-populated strata and across model specifications.

3.1 | Estimation Strategy

We begin with weighted descriptive statistics, calculating male and female means within each country \times age \times education cell. Gender gaps are defined as Male – Female differences and are reported with standard errors and 95% confidence intervals. Because male and female subsamples are disjoint, variances are computed additively across groups.

To assess robustness and allow formal inference, we estimate two complementary model specifications.

First, we fit generalised linear models (GLM) with a logit link for the dichotomised outcomes (FoF ≥ 4 ; SUSKILL ≥ 4). Each model includes the full interaction of country, gender, age group and education ($C_{\text{country}} \times C_{\text{gender}} \times C_{\text{age}} \times C_{\text{edu}}$). From these models, we compute predictive margins for men and women in each subgroup and report gender differences in predicted probabilities, ΔPr (≥ 4), with 95% confidence intervals obtained via parametric simulation based on the estimated covariance matrix. This

approach allows us to compare gender gaps consistently across institutional and life-course contexts.

Second, to preserve the ordinal structure of the underlying 1–5 scales, we estimate ordered logistic regressions within country \times education strata, including gender, age group and their interaction as predictors. These models produce expected-category differences (Male – Female), which provide a robustness check against potential information loss from dichotomisation. In the main text, we report the direction and relative magnitude of ordered-logit estimates alongside the GLM results, while full numerical outputs are provided in Appendix A. The consistency of findings across modelling approaches increases confidence that results are not driven by model specification.

It is important to note that the GEM APS is cross-sectional. Age-group differences therefore cannot be interpreted as within-individual life-course change but may also reflect cohort or period effects. Our analysis identifies age-graded patterns in entrepreneurial perceptions rather than longitudinal trajectories. Accordingly, causal language has been tempered, and interpretations focus on institutional and life-course structuring rather than direct developmental change.

Together, this estimation strategy allows us to evaluate whether gender gaps in perceived entrepreneurial skills and fear of failure vary systematically across age, education and institutional context, in line with the theoretical framework developed in Section 2.

4 | Results

This section presents the empirical results, tracing how gendered fear of failure (FoF) and perceived entrepreneurial skills (SUSKILL) evolve across age, education and national context. We interpret these patterns as the outcome of cumulative life-course processes shaped by gendered opportunity structures and institutional regimes. We begin by examining gender gaps (always defined as male–female) descriptively across education tiers and age groups, before turning to cross-country contrasts and then to regression-based estimates and robustness checks.

4.1 | Fear of Failure Gaps

Figure 1 plots the gender gap in FoF for Italy and the United Kingdom across education tiers and age groups, illustrating how the association between gender and perceived risk evolves across the life course. In Italy, women consistently report higher FoF than men across all education tiers and age groups, with gaps particularly large among the medium-educated and among older cohorts. These patterns suggest that reputational penalties and social expectations (amplified by the familistic welfare model) sustain women's perceived risk exposure throughout their careers.

In the United Kingdom, by contrast, FoF gaps are evident among younger cohorts but narrow steadily with age, approaching zero by pre-retirement. This convergence indicates that more flexible

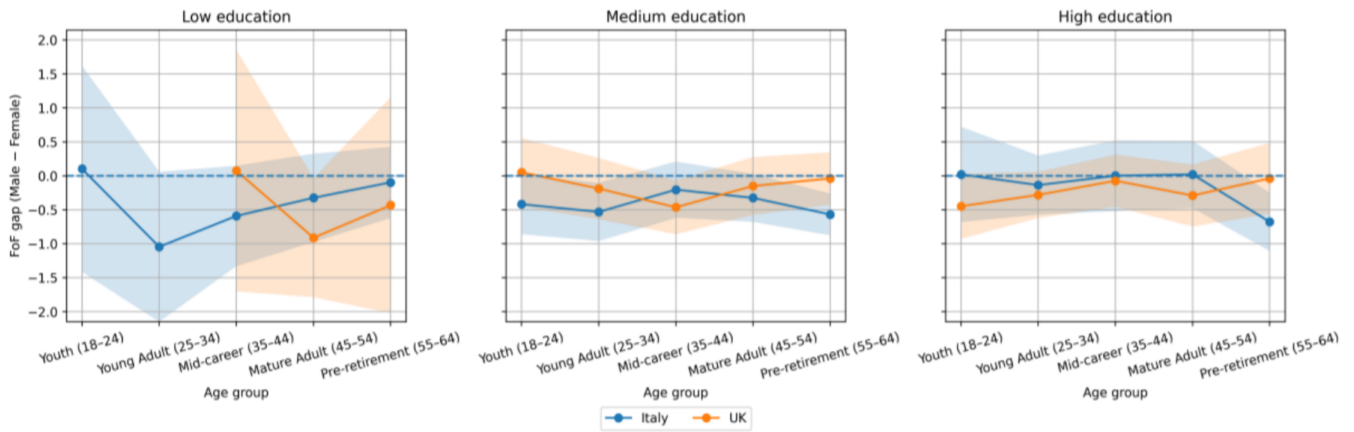


FIGURE 1 | Gender gap (Male – Female) for the fear of failure in Italy and United Kingdom split by education tier. *Source:* Authors’ elaboration based on GEM 2024 data.

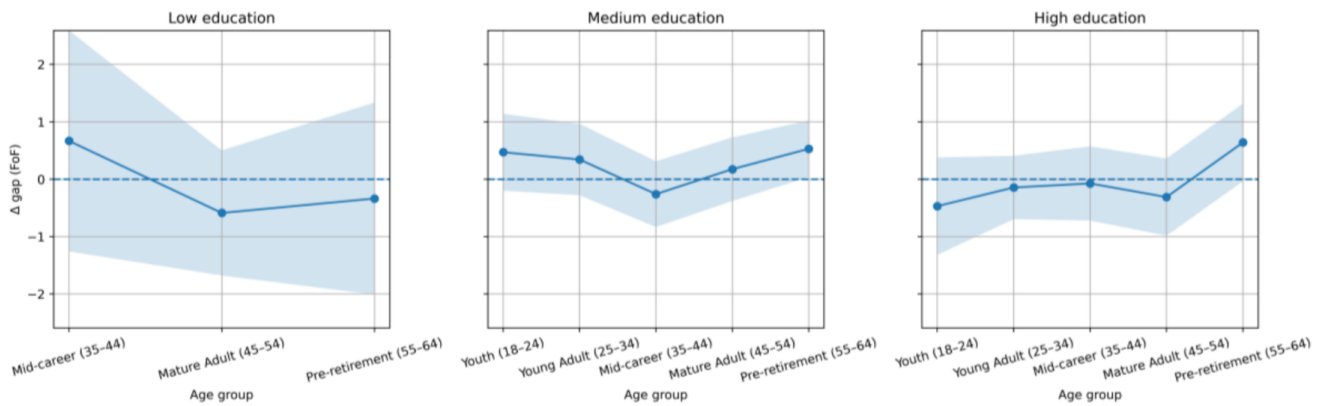


FIGURE 2 | Difference between the FoF gender gap (Male – Female) between Italy and United Kingdom split by education tier. *Source:* Authors’ elaboration based on GEM 2024 data.

labour markets and “second-chance” norms reduce reputational penalties and foster learning from failure.

Overall, these findings support the view that fear of failure functions not only as a psychological barrier but also as a structural indicator of institutional inclusivity, a factor that determines whether women can participate confidently in inclusive entrepreneurial ecosystems.

Cross-country contrasts (Figure 2) confirm that FoF gaps are smaller and often insignificant in the United Kingdom, supporting H2 (gendered penalties) and H3 (institutional moderation). Fear of failure thus operates not merely as a psychological barrier but as a structural indicator of institutional inclusivity that shapes women’s capacity to engage in inclusive entrepreneurship.

4.2 | Perceived Entrepreneurial Skills Gaps

Figure 3 reports the gender gap in perceived entrepreneurial skills (SUSKILL) by education tier and age group. Here, positive values indicate that men report higher self-assessed entrepreneurial skills. Men rate their entrepreneurial skills higher than women in both countries, yet trajectories diverge. In Italy, gender gaps widen with age and education: among

highly educated respondents aged 55–64, men are roughly 0.6 points more likely to report high entrepreneurial skills. This widening gap illustrates cumulative disadvantage, persistent stereotype-consistent feedback that erodes women’s self-efficacy despite comparable credentials.

In the United Kingdom, gaps remain smaller and more stable across the life course. Among medium- and high-education groups, differences are under 0.3 points and statistically weak. This stability reflects institutional contexts that validate competence more evenly and provide inclusive career structures.

Cross-national differences (Figure 4) show larger Italian gaps, particularly among highly educated women nearing retirement, supporting H1 (gendered trajectories of perceived entrepreneurial skills) and again H3. Institutional flexibility therefore enables higher-education attainment to function as an equaliser rather than a divider.

The most pronounced divergence emerges among highly educated respondents aged 55–64 in Italy. In this group, the gender gap in perceived entrepreneurial skills reaches 0.59 (95% CI 0.16–1.02), while the corresponding fear-of-failure gap is –0.68 (95% CI –1.11 to –0.25). This late-career pattern represents the strongest empirical support for cumulative disadvantage within

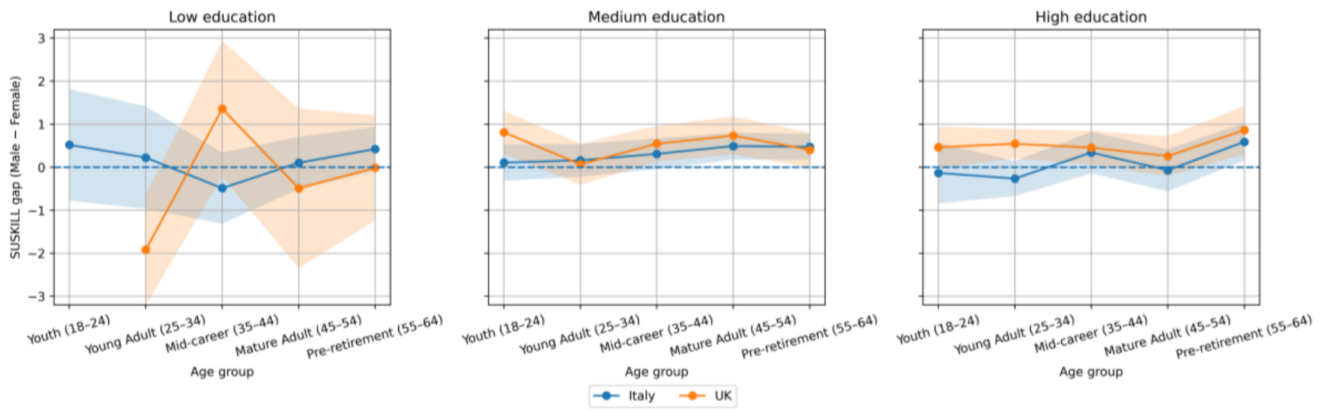


FIGURE 3 | Gender gap (Male – Female) for the perceived skills in Italy and United Kingdom split by education tier. *Source:* Authors’ elaboration based on GEM 2024 data.

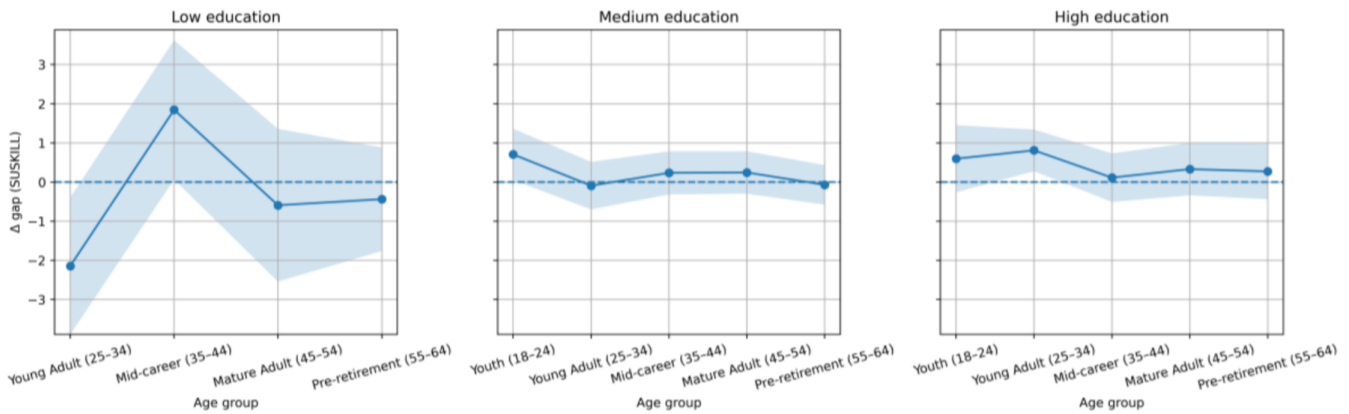


FIGURE 4 | Difference between the SUSKILL gender gap (Male – Female) between Italy and United Kingdom split by education tier. *Source:* Authors’ elaboration based on GEM 2024 data.

a coordinated market economy and contrasts sharply with the attenuation observed in the United Kingdom.

Table 1 synthesises the empirical support for the three hypotheses across institutional contexts. The evidence shows strong support for cumulative disadvantage (H1) in Italy, particularly among highly educated respondents aged 55–64, where gender gaps are most pronounced. In the United Kingdom, support for H1 is partial, as gaps attenuate with age. Gendered reputational penalties (H2) are clearly supported in Italy but weaken in the United Kingdom over the life course. Institutional moderation (H3) is supported overall, as trajectories diverge systematically between coordinated and liberal market economies.

4.3 | Regression Margins and Robustness

To validate these descriptive patterns, Figures 5 and 6 present predictive margins from the GLM regressions, reporting $\Delta Pr (\geq 4)$ for FoF and SUSKILL, respectively. Across both modelling strategies, the results are consistent. For FoF, the predicted gender gap is typically negative, with larger and more persistent differences in Italy. In the United Kingdom, by contrast, FoF gaps attenuate with age, especially among highly educated respondents. For SUSKILL, the gender gap is positive across specifications, with

men more likely to report high entrepreneurial skills, and the differences most pronounced among highly educated older cohorts.

Ordered logit models yield the same direction and relative magnitudes of effects, confirming that results are not artefacts of dichotomisation. The robustness of results also holds when UK vocational level 6 is reclassified and when alternative cut-offs are tested. Across these specifications, the substantive conclusions remain unchanged.

Full numerical estimates for all models and education–age cohorts are provided in Tables A1–A5, which report the complete set of results underlying Figures 1–6. The reliability of these estimates is consistent with the underlying sample composition across age, gender and education groups, as shown in Figures A1–A4.

5 | Discussion and Implications

Our results demonstrate that gender gaps in entrepreneurial perceptions evolve dynamically across the life course and are strongly conditioned by institutional environments. Rather than reflecting stable individual traits, perceived entrepreneurial skills and fear of failure emerge as gendered career perceptions shaped

TABLE 1 | Summary of results in relation to the working hypotheses.

Hypothesis	Italy	United Kingdom	Overall assessment
H1: Cumulative disadvantage (skills gap increases with age and education)	Supported (strong among high-educated 55–64)	Partially supported (gaps attenuate with age)	Partially supported, context-dependent
H2: Gendered reputational penalties (FoF persists/widens)	Supported (persistent gaps across life course)	Weak/attenuates over time	Context-dependent
H3: Institutional moderation (divergent trajectories)	Supported	Supported	Supported

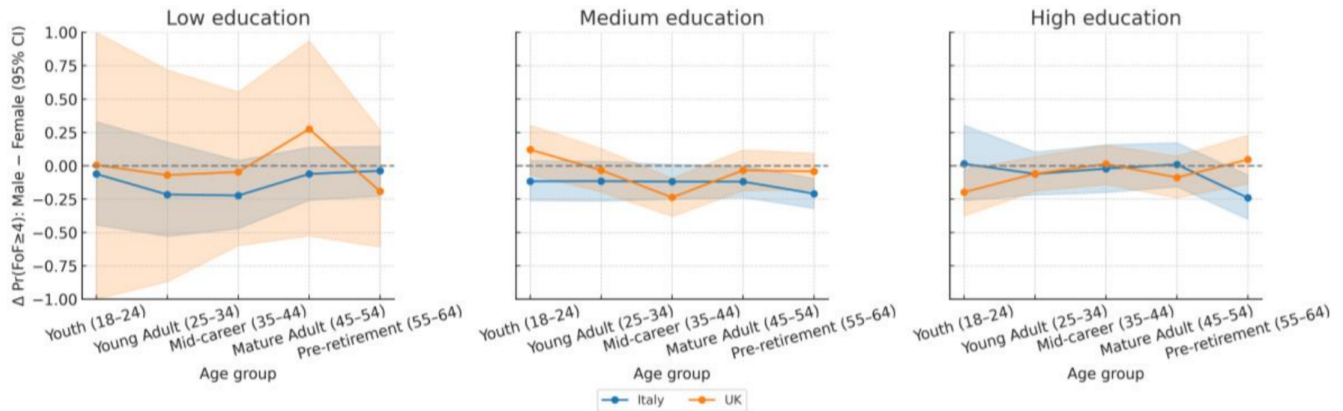


FIGURE 5 | Regression margins (GLM): $\Delta \Pr(\text{FoF} \geq 4)$ with 95% CIs—3 panels by education tier (Italy = blue; UK = orange). *Source:* Authors’ elaboration based on GEM 2024 data.

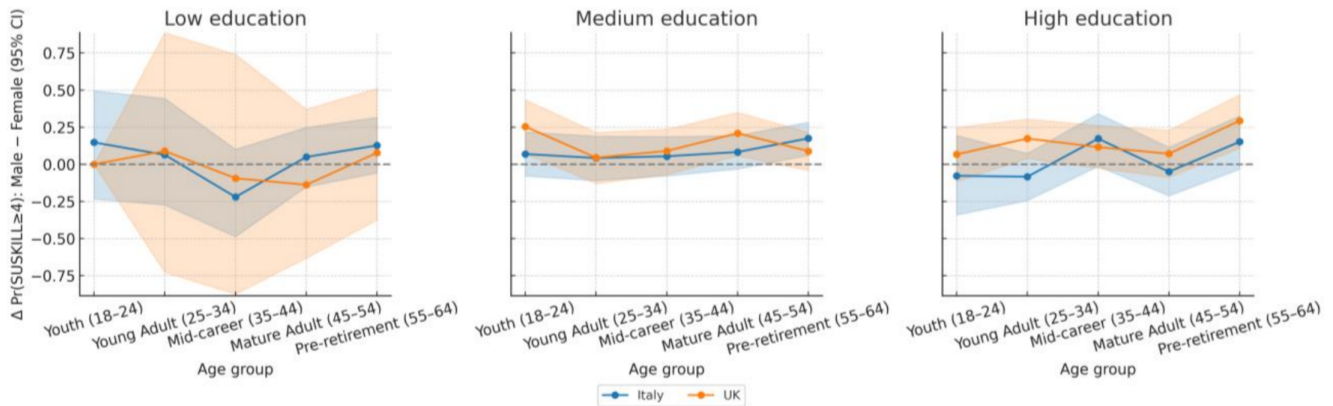


FIGURE 6 | Regression margins (GLM): $\Delta \Pr(\text{SUSKILL} \geq 4)$ with 95% CIs—3 panels by education tier (Italy = blue; UK = orange). *Source:* Authors’ elaboration based on GEM 2024 data.

by cumulative experience and institutional penalties. In linking cognitive aspects of entrepreneurship to institutional inclusivity, the findings highlight how systems that distribute legitimacy and tolerance for risk shape gender equality and the broader inclusivity of innovation systems.

The evidence supports all three hypotheses. Men report higher perceived entrepreneurial skills than women, with gaps widening among highly educated and older cohorts (H1). Women report persistently higher fear of failure, particularly in Italy (H2). Institutional context moderates these trajectories: gender gaps compress with age in the United Kingdom but persist or widen in Italy, especially among highly educated women approaching retirement (H3). These results provide empirical

validation of the proposed life-course institutional framework and demonstrate that entrepreneurial perceptions are embedded in regime-specific opportunity structures.

The most pronounced divergence emerges among highly educated Italian respondents aged 55–64. In this group, gender gaps in perceived entrepreneurial skills are largest and fear-of-failure differences remain substantial. This late-career pattern represents the strongest empirical support for cumulative disadvantage within a coordinated market economy and contrasts sharply with the attenuation observed in the United Kingdom.

Collectively, these patterns indicate that gender differences in perceived entrepreneurial skills and risk aversion are

institutionally structured rather than innate. Educational attainment amplifies gender gaps in more rigid systems but narrows them in more adaptive ones, suggesting that higher education functions as an equaliser only where institutional conditions allow women's expertise to translate into recognised competence. In Italy, rigid labour markets and familistic welfare norms reinforce reputational vulnerability (Saraceno 2022), whereas in the United Kingdom, stronger second-chance norms and labour-market flexibility enable confidence to accumulate more evenly across careers. Institutional inclusivity, particularly the capacity to recover from failure, thus emerges as a central dimension of equitable and resilient innovation systems.

Global evidence reinforces these findings. Studies of women's entrepreneurship in restrictive settings show how women negotiate legitimacy and expand agency within existing cultural limits (Almohanna et al. 2025). Societies that constrain women's ability to take or recover from risk may limit not only equity but also the inclusivity and adaptive capacity of innovation systems.

5.1 | Theoretical Contributions

This study advances entrepreneurial cognition and gender-and-work scholarship in three distinct ways. Each contribution clarifies how life-course processes and institutional contexts jointly shape gendered entrepreneurial perceptions.

First, we show that the effect of education on gender gaps in perceived entrepreneurial skills is institutionally contingent rather than universally equalising. Existing human capital and entrepreneurial self-efficacy research often assumes that higher education reduces gender disparities by enhancing skills, credentials and confidence. Our findings complicate this assumption. In the United Kingdom, gender gaps in perceived entrepreneurial skills attenuate with age among highly educated respondents. This suggests that education can function as an equaliser within flexible institutional settings. In Italy, by contrast, the largest gender gaps emerge among highly educated women nearing retirement. Education therefore does not uniformly reduce inequality. Its equalising potential depends on institutional opportunity structures that validate and translate women's credentials into recognised competence. Theoretically, this shifts attention from education as an individual resource to education as a resource whose effects are mediated by regime-level institutions. Future research should examine how educational attainment interacts with labour-market flexibility, welfare regimes and second-chance norms in shaping perceived entrepreneurial skills across contexts.

Second, we demonstrate that age-related convergence in entrepreneurial perceptions depends on institutional flexibility rather than representing a universal life-course trajectory. Life-course theory suggests that accumulated mastery experiences should reduce gender gaps in confidence and risk perception over time. Our results show that such convergence occurs in the United Kingdom but not in Italy. In the United Kingdom, gender gaps in fear of failure narrow with age. In Italy, they persist or widen into late career. This indicates that age effects are institutionally embedded rather than purely developmental. Institutional systems that normalise experimentation

and reduce long-term penalties for failure enable confidence to accumulate more evenly across genders. In more rigid regimes, cumulative disadvantage persists despite comparable career experience. This contribution integrates life-course theory with varieties-of-capitalism perspectives, showing that trajectories of perceived entrepreneurial skills are shaped by institutional logics rather than age alone. Future research should explicitly incorporate institutional flexibility into models of entrepreneurial development.

Third, we reconceptualise fear of failure as an institutionalised reputational penalty rather than solely a psychological barrier. Much of the entrepreneurship literature treats fear of failure as an individual cognitive or emotional constraint. Our comparative evidence suggests instead that fear of failure reflects socially structured assessments of reputational and career risk. In coordinated market economies such as Italy, where labour markets are more rigid and reputational recovery is constrained, gender gaps in fear of failure remain pronounced across the life course. In the United Kingdom, where second-chance norms are stronger, these gaps attenuate with age. This reframing locates fear of failure within institutional and symbolic systems that distribute legitimacy and tolerance for risk unevenly across genders. By embedding risk perception within regime-level structures, we extend theories of entrepreneurial cognition and clarify how institutional inclusivity shapes participation in innovation systems. Future research should investigate how bankruptcy regimes, employment protection and cultural narratives of failure condition gendered risk perceptions.

Collectively, these three contributions deepen understanding of how gendered entrepreneurial perceptions emerge through the interaction of education, age and institutional context. Rather than viewing self-efficacy and fear of failure as static individual traits, our findings position them as institutionally mediated career perceptions with implications for inclusive and resilient innovation systems.

5.2 | Policy and Managerial Implications

Embedding gender inclusivity in innovation ecosystems may broaden participation in entrepreneurial activity, with potential indirect relevance for sustainability-oriented initiatives. Our findings suggest that policy interventions must move beyond individual-level confidence training and address the institutional structures that shape how education, age and failure are evaluated. Policy design should recognise that fear of failure is socially produced. Reducing its gendered burden requires second-chance policies that lower reputational and career costs of entrepreneurial failure (Assoratgoon and Kantabutra 2023). In Italy, reforms to bankruptcy law, labour-market re-entry schemes, and public campaigns that reframe failure as learning could enhance inclusion and resilience.

Beyond regulation, cultural change is crucial. Narratives that equate risk-taking with masculinity and competence with invulnerability must be challenged. Because our results show that highly educated women in rigid systems face the largest late-career divergence, policy initiatives should not assume that educational attainment alone ensures equality. Entrepreneurship

education and support programmes should address mid- and late-career women, not only youth, through mentoring and recognition mechanisms that strengthen mastery experiences.

Within organisations, fostering safe-to-fail cultures encourages experimentation without disproportionate penalties. Sponsorship and visibility for women entrepreneurs and intrapreneurs can counteract stereotype-consistent feedback (Marlow and McAdam 2015). Institutional flexibility, particularly the ability to recover from failure without long-term stigma, emerges as a central lever for reducing cumulative disadvantage across the life course. While not directly examined in this study, integrating these practices into broader organisational strategies, including sustainability-oriented ones, may support more inclusive and adaptive innovation systems.

5.3 | Implications for Research

Future research should extend this life-course institutional framework along three lines. First, building on our finding that education operates differently across institutional regimes, future studies should examine how educational attainment interacts with labour-market flexibility, welfare-state arrangements and second-chance norms to shape gendered entrepreneurial confidence. Longitudinal designs are needed to trace how perceptions evolve within individuals over time and to disentangle age, cohort and period effects.

Second, given that age-related convergence appears contingent on institutional flexibility, comparative research across a wider range of coordinated, liberal and hybrid economies would help clarify how regime characteristics structure life-course trajectories of entrepreneurial perception. Such work could integrate macro-institutional indicators with micro-level survey data to model how institutional change affects gender gaps over time.

Third, further investigation is needed into fear of failure as an institutionalised reputational construct rather than solely an individual psychological barrier.

Qualitative and mixed-method studies could also unpack the cultural meanings of “failure” and “competence,” revealing how institutional codes are reproduced or contested. Extending this agenda beyond Europe would illuminate how diverse institutional logics and cultural expectations shape gendered entrepreneurial agency worldwide.

Integrating gender and institutional perspectives more systematically will help clarify how inclusive opportunity structures contribute to long-term innovation capacity and institutional resilience. Although sustainability orientation is not directly measured, inclusive participation in entrepreneurial ecosystems is widely recognised as a structural component of socially responsible and sustainable economic systems. Institutional contexts that reproduce gendered penalties in perceived entrepreneurial skills and fear of failure may constrain who enters and persists in entrepreneurship. These dynamics therefore have implications for the inclusivity and long-term resilience of sustainability-oriented innovation systems.

6 | Robustness and Limitations

Results are robust across all model specifications. Weighted estimates were checked against unweighted and effective sample sizes, and findings remain stable when alternative classifications and model forms are used. Ordered-logit regressions confirm both the direction and relative magnitude of gender gaps in perceived entrepreneurial skills and fear of failure, supporting the consistency of institutional patterns across measurement scales.

Some sampling limitations should be noted. A few cross-classified cells, particularly low-education youth in the United Kingdom, contain very small numbers of respondents, producing wide confidence intervals. Estimates for these sparse cells should therefore be interpreted with caution. However, these cases do not alter the overall patterns: gender gaps follow the same direction when analyses are restricted to well-populated subsamples.

The cross-sectional design of the GEM survey restricts causal inference and prevents direct observation of individual change. Our life-course approach approximates longitudinal dynamics by analysing age and education cohorts, but observed age differences may reflect cohort or period effects rather than developmental trajectories. Future research using panel data would better capture how entrepreneurial perceptions evolve within individuals and respond to institutional change.

In addition, GEM records gender as a binary category, which limits the ability to analyse non-binary or gender-diverse identities and constrains the scope of intersectional analysis. While education is treated here as a structural axis of stratification, other intersecting dimensions such as ethnicity, migration background, or caregiving status cannot be fully examined with the available data.

Cross-national comparison also raises interpretive challenges. Perceptions of “failure” and “competence” may not have identical meanings across institutional settings. In coordinated market economies such as Italy, where employment and social reputation are closely linked, failure can carry stronger moral or relational penalties. In liberal market economies such as the United Kingdom, failure is more often treated as a temporary setback within an opportunity-oriented discourse. These cultural distinctions are theoretically meaningful, illustrating how institutional and symbolic codes shape self-reported perceptions rather than representing measurement error.

Finally, the study does not directly measure sustainability-oriented entrepreneurial activity. Implications for sustainability concern institutional inclusivity as a structural precondition for socially responsible and resilient innovation systems rather than empirically observed sustainability outcomes.

Despite these constraints, GEM data remain uniquely valuable for their harmonised design and national representativeness, allowing systematic comparison of institutional effects on gendered entrepreneurial perceptions. The stability of results across model specifications indicates that the observed life-course and institutional patterns are not artefacts of sampling or method but reflect genuine social structures linking gender, capability and risk attitudes.

Finally, these limitations highlight that entrepreneurial perceptions are shaped not only by social context but also by the instruments used to measure them. Future surveys would benefit from more context-sensitive designs that account for cultural framing, welfare-state logics and institutional meanings of risk and competence. Such refinements would improve understanding of how systemic environments influence entrepreneurial perceptions and their broader implications for innovation systems.

7 | Conclusions

This study demonstrates that gender gaps in entrepreneurial perceptions are not fixed psychological traits but institutionally structured life-course trajectories. Comparing Italy and the United Kingdom reveals that the evolution of perceived entrepreneurial skills and fear of failure depends not only on age and education but on the institutional environments within which careers unfold.

The most striking finding concerns highly educated Italian women aged 55–64, among whom gender gaps in perceived entrepreneurial skills are largest and fear-of-failure differences remain substantial. Rather than converging with age, as developmental or human capital models might predict, these gaps persist or widen within a coordinated market economy. By contrast, in the United Kingdom, gender gaps attenuate over time, particularly among highly educated respondents. This divergence suggests that education and experience do not automatically equalise gender differences; their effects are mediated by regime-level structures that shape reputational recovery, labour-market flexibility and second-chance norms.

Theoretically, these findings integrate life-course perspectives with varieties-of-capitalism approaches, demonstrating that entrepreneurial confidence and risk perception are institutionally embedded rather than purely individual attributes. Fear of failure emerges not simply as a psychological barrier, but as a socially structured assessment of reputational penalty that varies across institutional contexts.

These conclusions also generate new research questions. Why do highly educated women in more rigid institutional settings experience the greatest late-career divergence in entrepreneurial confidence? How do caregiving trajectories, occupational segregation and institutionalised stigma interact to shape perceived entrepreneurial skills over time? Longitudinal and mixed-method designs are particularly needed to disentangle cohort effects from cumulative disadvantage and to explore how institutional reforms alter gendered confidence trajectories.

Although sustainability orientation is not directly measured, the findings underscore that institutional inclusivity shapes who enters and persists in entrepreneurial activity. Innovation systems that reduce reputational penalties and enable recovery from failure may be better positioned to mobilise diverse human capital and support resilient, socially responsible forms of entrepreneurship.

In summary, reducing gender gaps in entrepreneurship requires more than individual empowerment; it requires institutional

environments that recognise competence, normalise experimentation and distribute opportunity equitably across the life course.

7.1 | Future Research Directions

Future research should build directly on the institutional divergences identified here. First, longitudinal data are needed to determine whether the late-career divergence observed among highly educated Italian women reflects cumulative disadvantage, cohort effects, or institutional rigidity over time. Second, comparative studies across a broader range of coordinated and liberal economies could clarify which specific institutional features such as bankruptcy regimes, employment protection and welfare arrangements most strongly condition gendered perceptions of risk and competence. Third, qualitative research should examine how reputational norms surrounding failure are constructed and experienced across institutional contexts, particularly among highly educated women whose formal qualifications do not translate into perceived entrepreneurial skills.

Such work would advance understanding of how institutional reform may reshape gendered perceptions of entrepreneurial skills and participation.

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Appendix A

Supplementary Figures and Tables

Figures A1–A4 display the composition of the analytic sample by AGE × GENDER × EDUCATION, separately for Italy and the United Kingdom and for each outcome (FoF and SUSKILL). Only respondents with valid outcome values (codes 1–5) are included; bars therefore show unweighted counts of analytically usable observations. Male series are shown in blue tones (Low/Medium/High) and female series in red tones. Because these are counts (not weighted), differences in bar heights reflect sample composition rather than population totals. For each age group on the x-axis, six bars are shown (Low_Male, Low_Female, Medium_Male, Medium_Female, High_Male, High_Female). Thin or absent bars indicate sparse or single-gender cells; in those cases, the gender gap (Male–Female) may be noisy or undefined in the main figures. This is visible in the United Kingdom at low education among younger cohorts, where male counts are near zero in some bins; conversely, Medium/High education cells are well-populated across ages in both countries. In the Italian data, Medium education dominates numerically through mid-career, with High education robust for both genders. The stability of the gender-gap lines in the main figures corresponds closely to these histograms: where both male and female bars are sizeable, gaps are estimated precisely; where one bar is very small, the gap carries a wide confidence interval or is omitted.

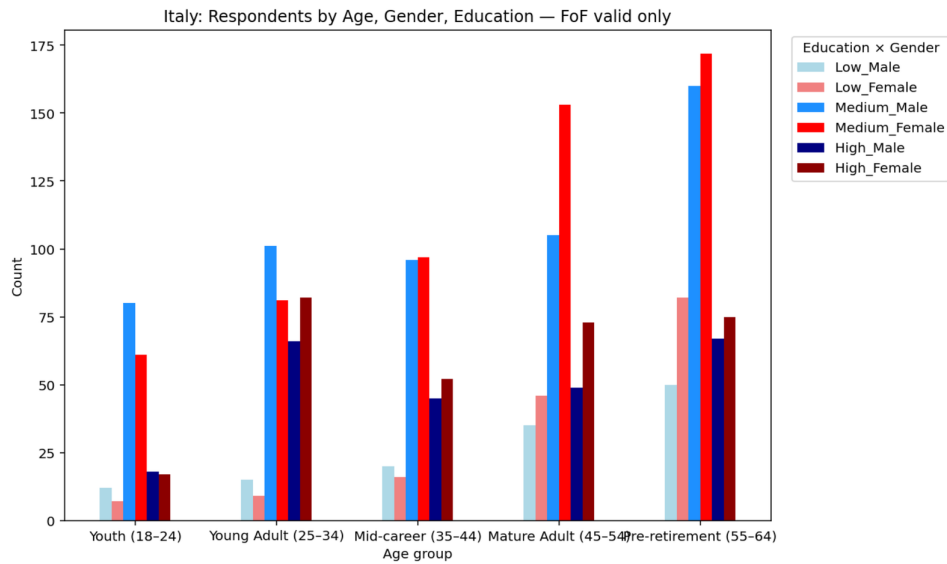


FIGURE A1 | Composition by Age × Gender × Education – FoF valid only (Italy).

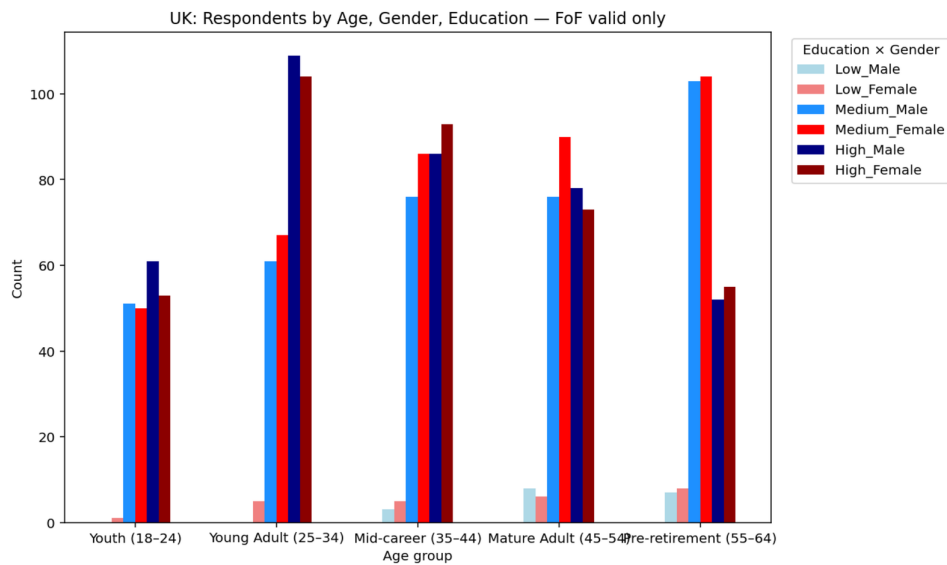


FIGURE A2 | Composition by Age × Gender × Education – FoF valid only (United Kingdom).

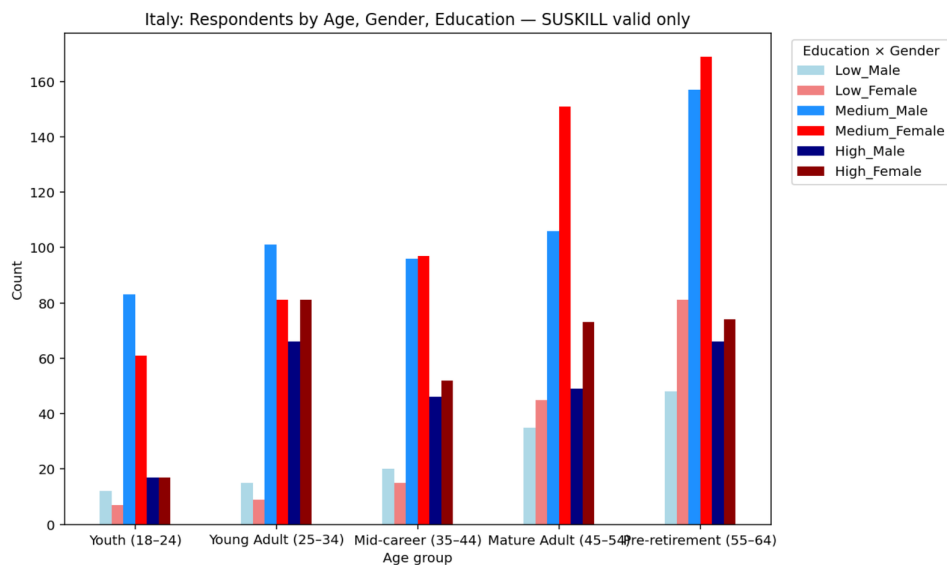


FIGURE A3 | Composition by Age × Gender × Education SUSKILL valid only (Italy).

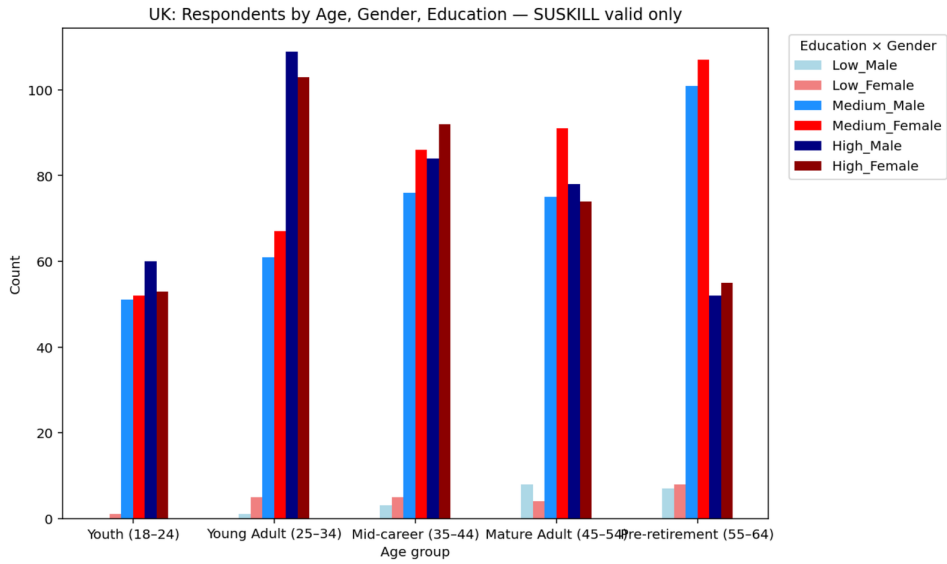


FIGURE A4 | Composition by Age × Gender × Education – SUSKILL valid only (United Kingdom).

In addition to these figures, Tables A1–A5 report the complete numerical results underlying the analyses presented in the main text. These tables summarise the weighted gender gaps in fear of failure and perceived entrepreneurial skills for Italy and the United Kingdom, together with the associated confidence intervals, sample sizes and cross-country differences. They also include the ordered-logit results that confirm the robustness of the main patterns across alternative model specifications. Taken together, the tables provide the detailed statistical basis for the graphical findings discussed in the results section, offering full transparency on the magnitude and consistency of gendered differences across age and education groups within each institutional context.

TABLE A1 | Weighted gender gaps on the FoF, with 95% CIs and sample sizes.

Country	Education	Age group	Gap	95% CI low	95% CI high	N. male	N. female
Italy	Low	Youth	0.103	-1.413	1.619	12	7
Italy	Low	Young adult	-1.045	-2.147	0.057	15	9
Italy	Low	Mid-career	-0.591	-1.328	0.147	20	16
Italy	Low	Mature adult	-0.324	-0.972	0.324	35	46
Italy	Low	Pre-retirement	-0.096	-0.618	0.426	50	82
Italy	Medium	Youth	-0.418	-0.858	0.021	80	61
Italy	Medium	Young adult	-0.531	-0.960	-0.103	101	81
Italy	Medium	Mid-career	-0.204	-0.617	0.209	96	97
Italy	Medium	Mature adult	-0.325	-0.677	0.027	105	153
Italy	Medium	Pre-retirement	-0.569	-0.875	-0.263	160	172
Italy	High	Youth	0.021	-0.679	0.721	18	17
Italy	High	Young adult	-0.137	-0.571	0.298	66	82
Italy	High	Mid-career	0.001	-0.519	0.521	45	52
Italy	High	Mature adult	0.021	-0.473	0.515	49	73
Italy	High	Pre-retirement	-0.678	-1.106	-0.251	67	75
United Kingdom	Low	Youth				0	1
United Kingdom	Low	Young adult				0	5
United Kingdom	Low	Mid-career	0.077	-1.700	1.854	3	5
United Kingdom	Low	Mature adult	-0.912	-1.786	-0.037	8	6
United Kingdom	Low	Pre-retirement	-0.433	-2.021	1.156	7	8
United Kingdom	Medium	Youth	0.052	-0.452	0.556	51	50
United Kingdom	Medium	Young adult	-0.188	-0.638	0.262	61	67
United Kingdom	Medium	Mid-career	-0.463	-0.858	-0.069	76	86
United Kingdom	Medium	Mature adult	-0.150	-0.575	0.276	76	90
United Kingdom	Medium	Pre-retirement	-0.039	-0.424	0.346	103	104
United Kingdom	High	Youth	-0.448	-0.926	0.030	61	53
United Kingdom	High	Young adult	-0.281	-0.619	0.057	109	104
United Kingdom	High	Mid-career	-0.072	-0.455	0.310	86	93
United Kingdom	High	Mature adult	-0.290	-0.745	0.165	78	73
United Kingdom	High	Pre-retirement	-0.038	-0.560	0.484	52	55

TABLE A2 | Difference in gender gap (UK – Italy), FoF.

Education	Age group	Δgap	95% CI low	95% CI high	SE
Low	Youth				
Low	Young adult				
Low	Mid-career	0.667	-1.257	2.592	0.982
Low	Mature adult	-0.588	-1.676	0.501	0.555
Low	Pre-retirement	-0.336	-2.008	1.336	0.853
Medium	Youth	0.470	-0.198	1.139	0.341
Medium	Young adult	0.344	-0.278	0.965	0.317
Medium	Mid-career	-0.259	-0.830	0.312	0.291
Medium	Mature adult	0.175	-0.377	0.727	0.282
Medium	Pre-retirement	0.530	0.038	1.022	0.251
High	Youth	-0.469	-1.317	0.378	0.432
High	Young adult	-0.144	-0.695	0.407	0.281
High	Mid-career	-0.074	-0.719	0.572	0.329
High	Mature adult	-0.311	-0.983	0.361	0.343
High	Pre-retirement	0.640	-0.035	1.315	0.344

TABLE A3 | Weighted gender gaps in SUSKILL, with 95% CIs and sample sizes.

Country	Education	Age group	Gap	95% CI low	95% CI high	N. male	N. female
Italy	Low	Youth	0.518	-0.777	1.814	12	7
Italy	Low	Young adult	0.223	-0.964	1.409	15	9
Italy	Low	Mid-career	-0.487	-1.311	0.336	20	15
Italy	Low	Mature adult	0.101	-0.501	0.703	35	45
Italy	Low	Pre-retirement	0.423	-0.085	0.931	48	81
Italy	Medium	Youth	0.106	-0.317	0.530	83	61
Italy	Medium	Young adult	0.159	-0.215	0.534	101	81
Italy	Medium	Mid-career	0.310	-0.047	0.667	96	97
Italy	Medium	Mature adult	0.491	0.179	0.804	106	151
Italy	Medium	Pre-retirement	0.473	0.174	0.771	157	169
Italy	High	Youth	-0.134	-0.838	0.571	17	17
Italy	High	Young adult	-0.265	-0.668	0.138	66	81
Italy	High	Mid-career	0.340	-0.139	0.820	46	52
Italy	High	Mature adult	-0.071	-0.555	0.413	49	73
Italy	High	Pre-retirement	0.589	0.157	1.021	66	74
United Kingdom	Low	Youth				0	1
United Kingdom	Low	Young adult	-1.920	-3.199	-0.642	1	5
United Kingdom	Low	Mid-career	1.358	-0.214	2.929	3	5
United Kingdom	Low	Mature adult	-0.491	-2.343	1.361	8	4
United Kingdom	Low	Pre-retirement	-0.014	-1.231	1.204	7	8
United Kingdom	Medium	Youth	0.812	0.315	1.309	51	52
United Kingdom	Medium	Young adult	0.068	-0.406	0.541	61	67
United Kingdom	Medium	Mid-career	0.545	0.129	0.960	76	86
United Kingdom	Medium	Mature adult	0.735	0.295	1.175	75	91
United Kingdom	Medium	Pre-retirement	0.402	-0.002	0.806	101	107
United Kingdom	High	Youth	0.462	-0.020	0.944	60	53
United Kingdom	High	Young adult	0.545	0.201	0.888	109	103
United Kingdom	High	Mid-career	0.453	0.064	0.843	84	92
United Kingdom	High	Mature adult	0.259	-0.201	0.718	78	74
United Kingdom	High	Pre-retirement	0.860	0.300	1.421	52	55

TABLE A4 | Difference in gender gap (UK – Italy), SUSKILL.

Education	Age group	Δgap	95% CI low	95% CI high	SE
Low	Youth				
Low	Young adult	-2.143	-3.887	-0.399	0.890
Low	Mid-career	1.845	0.071	3.619	0.905
Low	Mature adult	-0.592	-2.539	1.355	0.993
Low	Pre-retirement	-0.437	-1.757	0.882	0.673
Medium	Youth	0.706	0.053	1.359	0.333
Medium	Young adult	-0.092	-0.696	0.512	0.308
Medium	Mid-career	0.235	-0.313	0.783	0.279
Medium	Mature adult	0.244	-0.296	0.784	0.275
Medium	Pre-retirement	-0.071	-0.573	0.432	0.256
High	Youth	0.596	-0.258	1.450	0.436
High	Young adult	0.809	0.280	1.339	0.270
High	Mid-career	0.113	-0.505	0.730	0.315
High	Mature adult	0.330	-0.338	0.997	0.341
High	Pre-retirement	0.272	-0.436	0.979	0.361

TABLE A5 | Ordered-logit (unweighted) expected-category difference (Male – Female) by country × education × age.

Country	Education	Age group	ΔExp (FoF)	ΔExp (SUSKILL)
Italy	Low	Youth	0.14	0.69
Italy	Low	Young adult	-0.93	0.43
Italy	Low	Mid-career	-0.44	-0.37
Italy	Low	Mature adult	-0.07	0.13
Italy	Low	Pre-retirement	0.02	0.45
Italy	Medium	Youth	-0.46	0.14
Italy	Medium	Young adult	-0.47	0.20
Italy	Medium	Mid-career	-0.20	0.27
Italy	Medium	Mature adult	-0.37	0.44
Italy	Medium	Pre-retirement	-0.56	0.49
Italy	High	Youth	0.06	-0.14
Italy	High	Young adult	-0.15	-0.26
Italy	High	Mid-career	-0.07	0.31
Italy	High	Mature adult	0.03	-0.05
Italy	High	Pre-retirement	-0.73	0.58
United Kingdom	Low	Youth	-0.00	-0.35
United Kingdom	Low	Young adult	-2.47	-2.00
United Kingdom	Low	Mid-career	0.12	1.05
United Kingdom	Low	Mature adult	-1.00	-0.41
United Kingdom	Low	Pre-retirement	-0.40	-0.06
United Kingdom	Medium	Youth	0.08	0.77
United Kingdom	Medium	Young adult	-0.21	0.07
United Kingdom	Medium	Mid-career	-0.47	0.47
United Kingdom	Medium	Mature adult	-0.13	0.75
United Kingdom	Medium	Pre-retirement	-0.07	0.45
United Kingdom	High	Youth	-0.45	0.42
United Kingdom	High	Young adult	-0.30	0.54
United Kingdom	High	Mid-career	-0.12	0.47
United Kingdom	High	Mature adult	-0.37	0.23
United Kingdom	High	Pre-retirement	0.07	0.93

Note: Positive values indicate men report higher categories; negative values indicate women report higher categories.