International Entrepreneurship Review

2024, Vol. 10, No. 2

10.15678/IER.2024.1002.07

Entrepreneurial intentions among female senior high school students in Ghana

Kwaku Amofah, Michael Gameli Dziwornu, Tomasz Rachwał, Ramon Saladrigues, Fred Fosu Agyarko

ABSTRACT

Objective: The objective of the article is to understand entrepreneurial intentions among female high school students in Ghana using the theory of planned behaviour. Moreover, it investigates differences based on parental entrepreneurship background and academic specialization.

Research Design & Methods: We selected a sample of 1286 senior high school females across 20 schools in Ghana via convenience sampling. We gathered data through a structured questionnaire by Liñán and Chen (2009) and analysed it using confirmatory factor analysis (CFA) and structural equation modelling (SEM) post-screening.

Findings: The results revealed strengthened entrepreneurial intentions for females with parent role models compared to those without. Although all programs significantly impacted intentions, the business track exhibited the largest effect. Hypothesis testing confirmed the theory of planned behaviour's core antecedents as significant drivers.

Implications & Recommendations: The findings can guide education policies and interventions aimed at strengthening female entrepreneurial intentions. However, future studies may consider more senior high or secondary schools in Ghana and other countries.

Contribution & Value Added: This research makes key contributions. For instance, it provides greater clarity on the motivational factors shaping Ghanaian female students' orientations toward future entrepreneurship.

Article type:	research article
Keywords:	entrepreneurial intentions; Ghana; theory of planned behaviour; senior high school students; females
JEL codes:	I21, L26

Received: 5 March 2024 Revised: 19 May 2024 Accepted: 19 May 2024

Suggested citation:
Amofah, K., Dziwornu, M.G., Rachwał, T., Saladrigues, R., & Agyarko F.F. (2024). Entrepreneurial intentions among female senior high school students in Ghana. *International Entrepreneurship Review,* 10(2), 101-119. https://doi.org/10.15678/IER.2024.1002.07

INTRODUCTION

The role of women in the economic advancement of nations cannot be overstated as they constitute nearly half of the employed population. However, in certain sectors, such as entrepreneurship, their participation remains inadequate (Strawser *et al.*, 2021). Ghana is positioned as the second country in Africa concerning female entrepreneurs and occupies the 46th spot in the global rankings among Middle East and North Africa (MENA) economies. However, despite this ranking, female business proprietors in Ghana exhibit inferior performance compared to their male counterparts, as indicated by decreased productivity and sales reported by businesswomen (Owoo *et al.,* 2019; Agyire-Tettey *et al.,* 2018). In terms of value, the disparity in productivity between females and males falls within the bracket of 11% to 19%, varying based on the metric of productivity employed, which is a figure similar to assessments made for other nations in Africa (Aterido *et al.,* 2011). Moreover, women's involvement in decision-making processes in Ghana remains limited, with only 15% of national parliament members being women, and 27% of management positions in the private sector being held

by women (Caulker *et al.,* 2023). Despite their significant contribution to economic growth, women continue to face disparities in treatment, exemplified by lower remuneration compared to their male counterparts (Jha *et al.*, 2018).

In developing and emerging nations, women are often burdened with domestic responsibilities and household commitments, which hinder their participation in the workforce (Yousafzai *et al.*, 2015). Although societal advancements have led to improvements in the socioeconomic status of women, certain challenges persist, including issues of fair treatment, egalitarianism, prejudice, and the perpetuation of violent acts against women (Fauzi *et al.*, 2023).

Furthermore, the labour market poses greater vulnerability for women in Ghana, as they are more likely to hold precarious employment. A significant proportion of women (77%) are engaged in vulnerable jobs, compared to 58% of men (Caulker *et al.*, 2023). This highlights the need for targeted interventions aimed at addressing the disparities faced by women in the workforce, particularly in the entrepreneurial sector.

The Millennium Development Goal 3, which aims to promote gender equality and empower women, is a vital strategy adopted by governments and development partners to bridge the gender gap in the business sector (Buame *et al.*, 2013). Despite Ghana's leadership in promoting gender equality in the West and Central Africa region (Caulker *et al.*, 2023), deeply ingrained gendered social norms continue to marginalize women from crucial opportunities throughout their lives. The challenges posed by climate change, the COVID-19 pandemic, and high inflation further exacerbate gender disparities across all sectors (Caulker *et al.*, 2023). Nonetheless, empowering women in entrepreneurship is recognized as a key driver of economic growth and societal advancement. In Ghana, Buame *et al.* (2013) argue that significant progress in gender equity, either through human capital accumulation or increased economic participation among women, can result in an annual economic growth rate of 2.5%. Fauzi *et al.* (2023) emphasize the importance of women's entrepreneurial endeavours in achieving sustainable development goals (SDGs), particularly SDG 1, which aims to eradicate poverty in all its forms globally.

The significance of women's roles in economic development, personal health, and societal advancement has been acknowledged by various organizations and governmental entities (ILO 2020; UN Women, 2020; Bullough *et al.* 2019). Elsayed *et al.* (2021) highlight the low levels of economic and social empowerment experienced by women in many developing nations, which pose significant challenges. According to the World Bank's development indicators for 2022, Ghana's female population represents 50.13% of the total population (World Bank, 2007; Doepke *et al.*, 2012). Women in developing nations continue to lack social and economic influence compared to their counterparts in developed countries (World Bank, 2007; Doepke *et al.*, 2012). Kariv (2013) identifies several limitations and barriers that prevent women from pursuing entrepreneurial careers, including institutional, regulatory, sociological, and skill-related constraints, as well as attitude and resource-related barriers.

The effectiveness of entrepreneurial education at the secondary school level has garnered increasing attention in recent years, particularly considering the growing recognition of the importance of fostering entrepreneurial intentions among young people (Martínez-Gregorio & Oliver, 2022; Kilar & Rachwał, 2019; Rachwał *et al.,* 2016). While most empirical research on entrepreneurship has focused on university students (*e.g.* Amofah *et al*., 2023; 2024; Andrade *et al.,* 2023; Korpysa, & Waluyohadi, 2022; Reissová *et al.,* 2020; Wach & Wojciechowski, 2016; Zamrudi & Yulianti, 2020), a significant knowledge gap remain regarding the entrepreneurial intentions of secondary school students (Escolar-Llamazares *et al.*, 2019). This is despite the fact that secondary school students have expressed an interest in educational initiatives that align with their interests (Xu *et al.*, 2016). The early years of life and adolescence are widely considered to be critical periods for acquiring knowledge and cultivating favourable attitudes towards entrepreneurship (Fayolle & Liñán, 2014). However, research on entrepreneurial education has been largely limited to university students, with a scarcity of studies involving adolescents (Schaub & Tokar, 2005). These limitations in the ability to generalize findings to the broader population of prospective non-university entrepreneurs.

Notwithstanding, researchers have studied the efficacy of entrepreneurial education for secondary pupils, albeit infrequently (Athayde, 2009; Peterman & Kennedy, 2003; Sánchez, 2013). These studies have the potential to enhance the development of more efficient education initiatives (Fayolle & Liñán, 2014).

Moreover, the overreliance on university students and the scarcity of research involving adolescents have imposed limitations on the ability to generalize the findings to the broader population of prospective non-university entrepreneurs (Schaub & Tokar, 2005). Noteworthy, women entrepreneurs play a crucial role in generating new jobs and advancing the social and economic development of their societies (Brush *et al.*, 2019; Hechavarria *et al.*, 2019). However, the interplay and complexities of women's entrepreneurship, growth, and culture are understudied (Escolar-Llamazares *et al.*, 2019; Sidi Ali, 2016).

We aimed to investigate the entrepreneurial intentions of senior high school students (SHSS) in Ghana, with a particular focus on female students. We employed the theory of planned behaviour (TPB) and a survey questionnaire to gather data. The TPB model has been widely used in research on entrepreneurial intentions and studies have shown that it provides a reliable framework for understanding the factors that influence entrepreneurial behaviour (Ajzen, 1991; La Barbera & Ajzen, 2020). However, there is a need for further research to validate the TPB model among secondary school students, particularly among female students (Sara Martínez-Gregorio & Oliver, 2022). The study's motivation is rooted in the pressing issue of youth unemployment, particularly among females, which poses significant socio-economic challenges for national governments (Padi *et al.*, 2022). Entrepreneurial education in secondary schools has been identified as a crucial tool for fostering innovative systems and entrepreneurial endeavours (Martínez-Gregorio & Oliver, 2022; Rachwał *et al.* 2016). Furthermore, there is a need for more diverse and inclusive samples in research studies to enhance the generalizability of findings (Khan *et al.*, 2020). To the best of our knowledge, this study is one of the pioneering studies on female entrepreneurial intentions in Ghana, which can be classified as a novelty.

The study addresses the following research questions: To what extent do female secondary school students aspire to be entrepreneurs?, What are the differences in entrepreneurial intentions between various disciplines (programs of study)?, What are the differences in entrepreneurial intentions between students with and without entrepreneurial role models? The study's findings have important implications for promoting entrepreneurship in early education and addressing the challenges of youth unemployment. The article is structured as follows. The next section will present a literature review and conceptual framework followed by a description of the methodology, results, and discussion. Finally, we will discuss the conclusion, implications, and study limitations.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Theory of Planned Behaviour and Entrepreneurial Intentions

Aside the criticisms (its sole concentration on logical reasoning, its static explanatory character, and whether or not these are simply commonsense claims that are unfalsifiable) of the theory of planned behaviour (TPB) (McEachan *et al.*, 2011; Ogden, 2003; Sheeran *et al.*, 2013), it is a widely used framework for modelling entrepreneurial intentions and their precursors, including attitudes towards entrepreneurship, subjective norms, and perceived behavioural control (Amofah *et al*., 2023, 2024; Martínez-Gregorio & Oliver, 2022; Wach & Wojciechowski, 2016). The theory of planned behaviour posits that intentions serve as the best predictor of future behaviour (Ajzen, 2001). Entrepreneurial intention refers to the deliberate cognitive state that precedes and focuses attention on venturing actions like starting a business or adopting an entrepreneurial role (Moriano *et al.*, 2012). Scholars see it as the conscious intent preceding entrepreneurial behaviour and a strong marker of eventual conduct (Martínez-Gregorio & Oliver, 2022). Moreover, TPB proposes three drivers of intentions: perceived control, subjective norms, and attitudes about the behaviour. Other factors are considered to influence intentions via these components (Entrialgo & Iglesias, 2016). Attitudes relate to personal evaluations regarding the expected consequences of the behaviour grounded in beliefs about how it will impact oneself and others. Subjective norms encompass perceived social pressures to perform the behaviour based on perceptions that relevant others endorse engagement. Perceived behavioural control denotes the belief in having the necessary skills, experiences, and resources to successfully execute the behaviour (Bouarir *et al.*, 2023).

Entrepreneurship is often conceptualized as the outcome of a deliberate, planned decision that can be cultivated through educational methods and real-world experience (Liñán & Chen, 2009; İyigün,

2015). While approximately 90% of Norwegian secondary schools offer entrepreneurial education, its presence in Ghana remains limited (Johansen & Schanke, 2013). However, promoting such training in high schools is a vital tool for strengthening innovation systems and entrepreneurship overall (Fagerberg & Srholec, 2008). Early entrepreneurial education can facilitate the development of venture skills, underscoring its importance (Huber *et al.*, 2014). Effectiveness is typically gauged through enhanced entrepreneurial attitudes, self-efficacy, or intentions (Athayde, 2012; Bergman *et al.*, 2011; Sánchez, 2013; Schröder & Schmitt-Rodermund, 2006). Of these, entrepreneurial intention is the most widely used variable for assessing educational impact (Bae *et al.*, 2014; Longva & Foss, 2018).

For instance, a study in South Korea found that perceived behavioural control, social norms, and favourability of attitudes positively predicted entrepreneurial intentions among high schoolers (Kim *et al.*, 2022). Global surveys revealed relatively high 3-year entrepreneurial intention rates of 29% for young women and 35% for young men (Schott *et al.*, 2015). Introducing entrepreneurship through formal schooling is expected to raise women's participation levels (Jones, 2014). Analyses likewise show a strong inclination and openness to entrepreneurial paths among female university students in Ghana, highlighting the need for comprehensive social and financial support mechanisms for this group (Padi *et al.*, 2022).

Women are less likely than men to launch a business in many developed and developing nations (Kelley *et al.*, 2010). Furthermore, according to Ackah *et al.* (2024), female-founded enterprises typically have lower success rates than their male counterparts. Prior research on entrepreneurial intentions has frequently utilized mixed-gender, with a limited focus exclusively on women (Anwar & Saleem, 2019; Bazan *et al.*, 2019; Sidi Ali, 2016). One study of female business undergraduates in India established attitudes, social norms, and perceived behavioural control as positive drivers of women's venturing intentions (Khan *et al.*, 2020). However, few studies have concentrated specifically on secondary school females' intentions as this article does.

University analyses reveal entrepreneurial self-efficacy and positive attitudes boost intentions, yet this examines high school students (Matsheke & Dhurup, 2017). Entrepreneurial attitudes directly and significantly influence venturing intentions for Ghanaian youth as well (Nunfam *et al.*, 2022). Personal attitudes play a pivotal role in explaining intentions more broadly (do Paço *et al.*, 2011). According to TPB, attitudes constitute a key cognitive foundation shaping behavioural intentions and actions (Ajzen, 1991; Vamvaka *et al.*, 2020). Specifically, optimistic perspectives on entrepreneurship cultivate favourable views toward entrepreneurship intentions (Ajzen, 1991). Empirical evidence verifies the attitudinal-intentions linkage among various groups (Amofah & Saladrigues, 2022; Amofah *et al.* 2020; Esfandiar *et al.*, 2019; Vamvaka *et al.*, 2020). However, one study found subjective norms and perceived control unrelated to women's venturing aims (Amofah & Saladrigues, 2022). From the foregoing, we hypothesised that:

H1: Attitude towards entrepreneurship positively impacts entrepreneurial intention.

H2: Perceived behavioural control or self-efficacy positively impacts entrepreneurial intention.

H3: Subjective norm positively impacts entrepreneurial intention.

Entrepreneurial Intentions, Prior Entrepreneurial Exposure/Role Models and Study Programme

Prior research has revealed that role models and early exposure shape youth entrepreneurial intentions. An entrepreneurship program for Australian female high school students increased venturing aims through nurturing soft skills, connections, and positive mentors (Shahin *et al.*, 2021). However, past participation exhibited negative links with attitudes, perceived control, norms, and intentions in one study, warranting further inquiry (Malebana & Mahlaole, 2023). This contrasts with findings by Malebana and Mothibi (2023), who reported that prior start-up experience and knowledge of successful entrepreneurs had a significant positive relationship with entrepreneurial intention, attitude towards entrepreneurship, subjective norms, and perceived behavioural control among secondary school learners in South Africa.

Role models also influence critical perceptual factors. Female exemplars boosted women's confidence and competitiveness compared to male demonstrations (Schier, 2020). Parents' entrepreneurship is associated with higher career expectations, motivations, and preparedness (Scherer *et al.*, 1989). Indeed, business students with family business backgrounds are likely to display higher intentions and talent (Looi & Khoo-Lattimore, 2015). Abbasianchavari and Moritz (2021) further emphasize the importance of considering different types of role models, sociocultural contexts, and life cycle stages when structuring entrepreneurship education programs, as role models play a vital role in shaping entrepreneurial intentions and behaviour (Edigbo *et al.*, 2021). Meanwhile, Ghanaian female mentorship initiatives improved various educational outcomes (Asiegbor *et al.*, 2016).

Furthermore, previous studies also show that students' academic specialization relates to entrepreneurial intentions. Business programs exhibit higher venturing aims versus other majors (Looi & Khoo-lattimore, 2015). Indeed, more entrepreneurship coursework fosters greater intentions (Fallatah & Ayed, 2023). Thus, positive links exist between entrepreneurship education and intentions (Martin *et al.*, 2013; Rauch & Hulsink, 2015). However, the impact of the antecedents of the TPB on intentions may differ for secondary school students pursuing different programme options, hence this study. Le *et al.* (2023) further contribute to this discourse by exploring the relationship between entrepreneurial education and intentions to become an entrepreneur among master's students, finding that entrepreneurial education positively correlates with entrepreneurial perceived feasibility, perceived desirability, and intention to enter entrepreneurial activities.

Broader curricula expanding women's access to education simultaneously enable female entrepreneurship by elevating skills and judgements around work options (Ahn & Winters, 2023). However, subjects aligned with industries like biotechnology or software provide targeted competencies for those venturing paths (Ahn & Winters, 2023). Thus, while arts programs are associated with lower incomes in self- or paid employment, STEM disciplines promise higher salaries for venturing. As entrepreneurial requirements differ by sector, tailored postsecondary training likely proves most salient (Ahn & Winters, 2023).

Still, basic education access indirectly spurs startups at a macro-level by lifting human capital (Rostam-Afschar, 2014). However, heightened secondary school mandates may not replicate higher education's enablement since they compel some unwilling prospective founders (Rostam-Afschar, 2014). Voluntary tertiary schooling optimizes skills for the motivated.

In the light of the above, we proposed that:

H4: Female students with prior entrepreneurial exposure or role models display favourable entrepreneurial intentions than those without.

H5: Differences in entrepreneurial intentions differ on a programme basis.

RESEARCH METHODOLOGY

Research Design and Analytical Approach

We aimed to analyse entrepreneurial intentions among female high school students in Ghana. We applied a survey questionnaire developed by Liñán and Chen (2009) grounded in the TBP encompassing four subscales: perceived behavioural control, attitudes towards entrepreneurship, subjective norms, and intentions. We selected this measurement scale to enable a valid, reliable assessment of venture perceptions and aims that address prior gaps.

We built the subscales on validated items from earlier works. We tested the scale validity plus the conceptual model and hypotheses statistically using Cronbach's alpha, confirmatory factor analysis, and structural equation modelling in SmartPLS software. Specifically, Cronbach's alpha evaluates internal reliability among subscale items. Confirmatory factor analysis checks if the data fits the hypothesized factor structure. Finally, structural equation modelling analyses the causal pathways within the conceptual framework.

Measurement

We used a 5-point Likert scale to evaluate all constructs, with 1 representing 'strongly disagree' and 5 indicating 'strongly agree.' Adapting Liñán and Chen's (2009) methodology, the survey measured attitudes towards entrepreneurship, subjective norms, perceived behavioural control/self-efficacy, and entrepreneurial intentions among students.

Sampling and Data Collection

We administered closed-ended self-report questionnaires to assess the variables hypothesized to shape startup intentions. After obtaining teacher approval, research team members distributed surveys with voluntary participation briefed to classes. We maintained anonymity by keeping responses anonymous. Only graduating secondary school students across 20 schools in Ghana's Bono region partook (a total of 2178 respondents, of which 1286 females were included in this study). We employed convenience sampling per precedents in entrepreneurship intention literature (Amofah & Saladrigues, 2022; Amofah *et al.*, 2020). The average respondent age was 19 years old. Table 1 displays the demographic details of respondents relating to their study program and their entrepreneurial family background, which are crucial for the research analysis.

Table 1. Characteristics of respondents

Variable	*Percentage*
Program of Study	
General Science	11.9
Business	14.3
General Arts	34.5
Visual Arts	23.0
Home Economics	6.7
Other	9.6
Entrepreneurial family background	
Yes	70.1
No	29.9

Source: own elaboration based on survey.

RESULTS AND DISCUSSION

Measurement Model

In the realm of structural equation modelling (SEM), this facet of the paradigm assesses the relationships between latent variables and their various indicators. Thus, we evaluated. the reliability and validity of constructs. We gauged the reliability and validity of constructs through Cronbach's alpha and average variance extracted (AVE), respectively. As Table 2 shows, the second and third columns delineate the standardized factor loadings and the associated p-values of the CFA model. All items were statistically significant (*i.e.*, p-value < 0.05), indicating that they accurately reflect their underlying latent constructs.

Furthermore, we observed that Cronbach's alpha and composite reliability values reported for all factors exceed the threshold of 0.70 (Hair *et al.,* 2010). This suggests that the measurement model was reliable. Furthermore, our measurement model achieved convergent validity, as evidenced by the average variance extracted (AVE) values recorded for each construct being greater than 0.05 (Table 3).

Structural model

To evaluate the hypothesized relationships in the structural model, assessing model fit is prudent first. We examined fit statistics for the model including standardized root mean square residual (SRMR), squared Euclidean distance (SED), geodesic distance (GD), chi-square and normed fit index (NFI). The values indicated an acceptable fitting model overall.

Specifically, the SRMR value of 0.064 was under the 0.08 threshold for good fit (Henseler *et al.*, 2014). Moreover, SED and GD exceeded the minimum 0.05 level as well. The NFI approached 1, denoting a better fit. Moreover, all items showed variance inflation factors under 2, signifying no multicollinearity concerns.

With adequate model fit confirmed, we tested the hypotheses. The first hypothesis predicted students' attitudes towards entrepreneurship positively influence entrepreneurial intentions across all specializations and the full sample. Results consistently supported this hypothesis (see Table 5 and Figure 1), agreeing with prior work (Khan *et al.*, 2020; Nunfam *et al.*, 2022). This underscores the need to foster favourable attitudes through education, rather than just technical skills (do Paço *et al.*, 2011).

Table 2. Measurement items, their reliability, and VIF's

Constructs and their respective items	Factor loadings	P-Values	VIF
Attitude towards entrepreneurship (ATE)			
Being an entrepreneur implies more advantages than disadvantages to me (ATE1)	0.663	0.00	1.350
A career as an entrepreneur is attractive to me (ATE2)	0.776	0.00	1.520
If I had the opportunity and resources, I'd like to start a firm (ATE3)	0.739	0.00	1.407
Being an entrepreneur would entail great satisfaction for me (ATE4)	0.707	0.00	1.352
Among various career options, I'd rather be an entrepreneur (ATE5)	0.563 (dropped)	0.00	1.160
Entrepreneurial intentions (EI)			
I am ready to do anything to be an entrepreneur (EI1)	0.751	0.00	1.637
My professional goal is to be an entrepreneur (EI2)	0.708	0.00	1.546
I will make every effort to start my own enterprise (EI3)	0.682	0.00	1.444
I am determined to create a firm in the future (EI4)	0.747	0.00	1.653
I have very seriously thought of starting a firm (EI5)	0.731	0.00	1.596
I have the firm intention to start a company someday (EI6)	0.712	0.00	1.532
Perceived behavioural control (PBC)			
Start a firm and keeping it working would be easy for me (PBC1)	0.605	0.00	1.238
I am prepared to start a viable firm (PBC2)	0.687	0.00	1.336
I can control the creation process of a new firm (PBC3)	0.685	0.00	1.357
I know the necessary practical details to start a firm (PBC4)	0.649	0.00	1.415
I know how to develop an entrepreneurial project (PBC5)	0.637	0.00	1.38
If I tried to start a firm, I would have a high probability of succeeding (PBC6)	0.656	0.00	1.245
Subjective norm (SN)			
My closest family members think that I should pursue a career as an entrepreneur (SN1)	0.814	0.00	1.602
My closest friends members think that I should pursue a career as an entrepreneur (SN2)	0.848	0.00	1.740
People who are important to me think that I should pursue a career as an entrepreneur (SN3)	0.842	0.00	1.582

Note: *VIF - Variance Inflation Factor

Source: own study based on survey data.

Table 3. Constructs reliability and validity

Constructs	Cronbach's alpha	Composite reliability	Average variance extracted
ATE	0.727	0.741	0.511
EI	0.816	0.819	0.521
PBC	0.733	0.735	0.520
SN	0.783	0.787	0.697

Source: own study based on survey data.

Table 4. Model fit

Indicators	Saturated model	Estimated model
Standardized root mean square residual (SRMR)	0.064	0.064
Squared Euclidean distance (SED)	0.857	0.857
Geodesic distance (GD)	0.192	0.192
Chi-square	2408.840	2408.840
Normed fit index (NFI)	0.822	0.822

Source: own study based on survey data.

The second hypothesis stated that perceived behavioural control positively impacts intentions. We found confirmation for it across all student groups and the combined sample. However, this directionally contrasts with some previous studies (Amofah & Saladrigues &, 2022) while aligning with others (Linan & Chen, 2009; Khan *et al.*, 2020).

Table 5. Regression [estimates of the structural model]

Hypotheses	Estimate	Standard error	Remarks	P-Values
Complete				
ATE -> EI	0.327	0.024	Supported	0.000
PBC -> EI	0.327	0.023	Supported	0.000
SN -> EI	0.213	0.022	Supported	0.000
Arts				
ATE -> EI	0.260	0.038	Supported	0.000
PBC -> EI	0.304	0.037	Supported	0.000
SN -> EI	0.269	0.033	Supported	0.000
Science				
ATE -> EI	0.321	0.055	Supported	0.000
PBC -> EI	0.354	0.065	Supported	0.000
SN -> EI	0.219	0.047	Supported	0.000
Business				
ATE -> EI	0.407	0.071	Supported	0.000
PBC -> EI	0.266	0.063	Supported	0.000
SN -> EI	0.237	0.07	Supported	0.000
Home economics				
ATE -> EI	0.394	0.047	Supported	0.000
PBC -> EI	0.245	0.051	Supported	0.000
SN -> EI	0.186	0.05	Supported	0.000
Visual arts				
ATE -> EI	0.386	0.082	Supported	0.000
PBC -> EI	0.466	0.081	Supported	0.000
SN -> EI	0.058	0.081	Not Supported	0.250
Others				
ATE -> EI	0.295	0.067	Supported	0.000
PBC -> EI	0.577	0.069	Supported	0.000
SN -> EI	-0.011	0.07	Not Supported	0.397

Source: own study based on survey data.

The third hypothesis aimed to investigate the impact of students' subjective norms on their entrepreneurial intentions. The complete sample model supported the hypothesis with a positive and statistically significant estimate for the SN variable. This suggests that students' subjective norm plays a

significant role in shaping their entrepreneurial intentions. Further analysis revealed that the results were consistent across different fields of study, including general arts, science, business, and home economics. However, the narrative differed for students who offered visual arts and others, as their estimates for the SN variable, although positive, were not statistically significant at 5%. This suggests that the subjective norm of students offering visual arts and others did not significantly influence their entrepreneurial intentions. Interestingly, the subjective norm construct is considered one of the weakest among the three determinants of the TPB in many studies, according to Andrade and Carvalho (2023). This is because African students, for instance, have been found to have a more entrepreneurial attitude, while Asian and American students perceive themselves as having more behavioural control. Moreover, Andrade and Carvalho (2023) noted that African students demonstrated a stronger subjective norm than their counterparts.

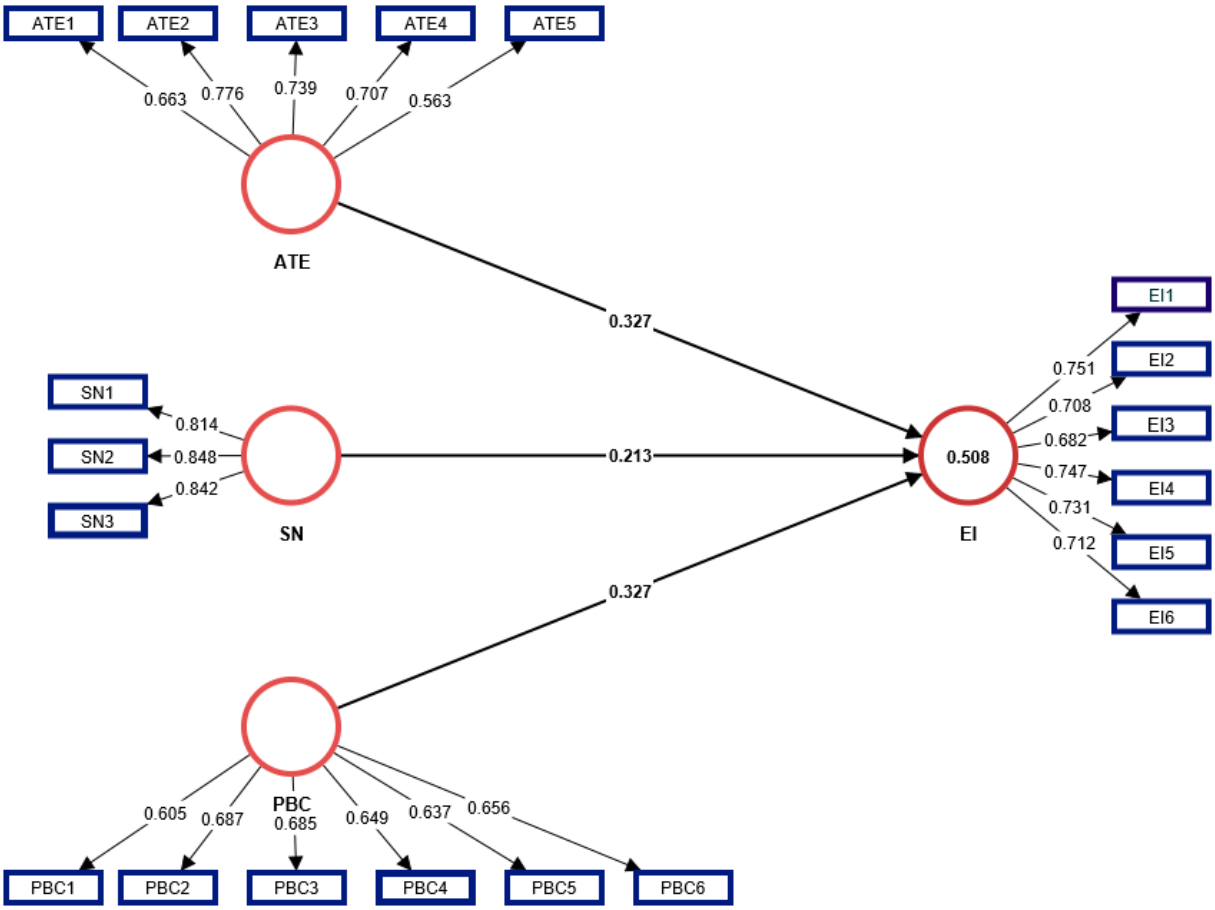

Figure 1. The estimated structural equation model

SEM model – fit: **χ2** (P-Value) = 0.00, NFI = 0.822, SED = 0.857, GD = 0.192, SRMR = 0.07, R2= 0.508

Source: own elaboration using SmartPLS.

According to the findings of Khan *et al.* (2020), the predictive power of PBC on entrepreneurial intention (EI) is deemed the most considerable, followed by the influence of ATE. Previous studies have consistently demonstrated that PBC is a significant predictor of EI (Bazan *et al.*, 2019; Roy *et al.*, 2017; Anwar & Saleem, 2019a; Maresch *et al.*, 2016; Liñán & Chen, 2009; Souitaris *et al.*, 2007). This lends support to the notion that PBC plays a vital role in shaping EI among female university students. Noteworthy, scholars have identified ATE as the strongest predictor of EI in earlier research (Souitaris *et al.*, 2007; Roy *et al.*, 2017; Bazan *et al.*, 2019; Maresch *et al.*, 2016).

In relation to Hypothesis 4, we aimed to investigate whether entrepreneurial exposure has a significant impact on the entrepreneurial intentions of female students. Our findings indicate that the attitude towards entrepreneurship among female students who have been exposed to entrepreneurship is positive and statistically significant. Similarly, the attitude towards entrepreneurship among

female students without entrepreneurial exposure is also positive and statistically significant. Although both groups display positive attitudes towards entrepreneurship, female students with prior entrepreneurial exposure exhibit more favourable entrepreneurial intentions than those without, as evidenced by the higher estimate (0.301) recorded for the former group compared to the latter (Table 6).

Table 6. Female students with and without prior entrepreneurial exposure

Hypotheses	Exposure	P-values (Exposure)	None	P-values (None)
ATE -> EI	0.301	0.000	0.295	0.000
PBC -> EI	0.341	0.000	0.349	0.000
SN -> EI	0.227	0.000	0.220	0.000

Source: own study based on survey data.

The study's findings suggest that female students with prior entrepreneurial exposure display more favourable entrepreneurial intentions than those without, in terms of both ATE and SN. Conversely, female students without prior entrepreneurial exposure display more favourable entrepreneurial intentions than those with exposure in terms of PBC. These findings support the notion that exposure to entrepreneurship can positively influence an individual's entrepreneurial intentions.

The study also explores the impact of role models on entrepreneurial intentions. According to research by Asiegbor *et al.* (2016), gender equality in Adaklu junior high schools has improved due to role models, and female students are influenced by role models in developing entrepreneurial attitudes and self-efficacy. Similarly, Moreno-Gómez *et al.* (2020) argue that having parental role models can boost an individual's desire to pursue entrepreneurship.

Moreover, we conducted a multigroup analysis to examine differences in entrepreneurial intentions among students enrolled in different programs (H5). While the majority of pairwise comparisons revealed no significant differences in entrepreneurial intentions based on programs offered, some comparisons showed significant differences (Table 7). Notably, entrepreneurship programs have been found to positively impact students' entrepreneurial intentions, engagement, and career ambitions (Liu *et al.*, 2023). However, the study notes that secondary schools in Ghana lack deliberate and systematic entrepreneurial course content, which may limit the impact of such programs on entrepreneurial intentions.

CONCLUSIONS

The findings carry important implications for entrepreneurship education policy in Ghana. At the secondary level, entrepreneurial skills modules should systematically cultivate positive attitudes by fostering self-efficacy through hands-on learning. Moreover, extracurricular programs can boost exposure through mentors and competitions. Furthermore, higher education curricula must balance hard skills with opportunities to support perceived behavioural control. Next, community outreach promoting local role models could inspire underrepresented groups through shared learning platforms. It is imperative that policymakers, school administrators, and entrepreneurship educators eagerly promote student entrepreneurial activities and implement teaching policies focused on learner-centric methods, skills development, and cultivating positive entrepreneurial attitudes. The practical actions taken in entrepreneurial education are crucial for effectively spurring students' desires to launch ventures, thereby creating jobs and wealth to drive growth. Hence, adapting teaching approaches and aligning course content to shape enterprising mindsets is vital.

The findings also highlight the potential of entrepreneurship development for positive social impact in Ghana. Widening access to entrepreneurial exposure and role models especially benefits women and students. Such interventions inspire marginalized groups while strengthening socioeconomic ties. Moreover, recognizing the influence of subjective norms also affords opportunities for targeted community engagement. Interactive platforms celebrating success stories resonate with values that sustain aspiring entrepreneurs through challenges.

Table 7. Multigroup analysis

Program 1 vs Program 2	Hypothesis	Program 1	Program 2	Invariant	Differences (1-2)
Arts vs business	ATE -> EI	0.309***	0.402***	Yes	-0.093
	PBC -> EI	0.303***	0.266***	Yes	0.037
	SN -> EI	0.271***	0.239***	Yes	0.032
Arts vs home economics	ATE -> EI	0.309***	0.390***	Yes	-0.081
	PBC -> EI	0.303***	0.245***	Yes	0.058
	SN -> EI	0.271***	0.185***	Yes	0.086
Arts vs science	ATE -> EI	0.309***	0.319***	Yes	-0.010
	PBC -> EI	0.303***	0.346***	Yes	-0.042
	SN -> EI	0.271***	0.225***	Yes	0.046
Arts vs visual	ATE -> EI	0.309***	0.390***	Yes	-0.081
	PBC -> EI	0.303***	0.460	No	-0.157**
	SN -> EI	0.271***	0.055	No	0.216*
Arts vs others	ATE -> EI	0.309***	0.293***	Yes	0.016
	PBC -> EI	0.303***	0.578	No	-0.275*
	SN -> EI	0.271***	-0.018	No	0.289*
Business vs home economics	ATE -> EI	0.402***	0.390***	Yes	0.012
	PBC -> EI	0.266***	0.245***	Yes	0.021
	SN -> EI	0.239***	0.185***	Yes	0.054
Business vs science	ATE -> EI	0.402***	0.319***	Yes	0.083
	PBC -> EI	0.266***	0.346***	Yes	-0.079
	SN -> EI	0.239***	0.225***	Yes	0.014
Business vs visual	ATE -> EI	0.402***	0.390***	Yes	0.012
	PBC -> EI	0.266***	0.460	No	-0.194**
	SN -> EI	0.239***	0.055	No	0.184*
Business vs others	ATE -> EI	0.402***	0.293***	Yes	0.109
	PBC -> EI	0.266***	0.578	No	-0.312*
	SN -> EI	0.239***	-0.018	No	0.257**
Home economics vs science	ATE -> EI	0.390***	0.319***	Yes	0.071
	PBC -> EI	0.245***	0.346***	Yes	-0.100
	SN -> EI	0.185***	0.225***	Yes	-0.039
Home economics vs visual	ATE -> EI	0.390***	0.390***	Yes	0
	PBC -> EI	0.245***	0.460	No	-0.215**
	SN -> EI	0.185***	0.055	No	0.130
Home economics vs others	ATE -> EI	0.390***	0.293***	Yes	0.097
	PBC -> EI	0.245***	0.578	No	-0.333**
	SN -> EI	0.185***	-0.018	No	0.204***
Science vs visual	ATE -> EI	0.319***	0.390***	Yes	-0.071
	PBC -> EI	0.346***	0.460***	Yes	-0.115
	SN -> EI	0.225***	0.001	No	0.170*
Science vs others	ATE -> EI	0.319***	0.293***	Yes	0.026
	PBC -> EI	0.346***	0.578	No	-0.233**
	SN -> EI	0.225***	-0.018	No	0.243**
Visual vs others	ATE -> EI	0.39***	0.293***	Yes	0.097
	PBC -> EI	0.460***	0.578***	Yes	-0.118
	SN -> EI	0.055	-0.018	Yes	0.073

Note: ***P < 0.001, **P < 0.01, *P < 0.05.
Source: own study.

Women entrepreneurs often confront low self-confidence due to systemic disadvantages, socio-cultural biases, and financial barriers. Increasing female participation in entrepreneurship carries both prospects and difficulties needing redress (Moreira *et al.*, 2019). Policy reforms are critically

required to transform frameworks inhibiting women's workforce involvement, especially in emerging economies (Cho *et al.*, 2020). Examining women's startup intentions would strengthen overall entrepreneurship understanding while spotlighting institutional and cultural dimensions alongside gender equality issues in developing contexts like Ghana.

Validating the TPB model among high school students provides a reliable tool to evaluate entrepreneurial intentions. It can assess education program efficacy and benchmark secondary school orientation levels. The attitudes and self-efficacy factors importantly predicted venturing aims, signalling the need to prioritize confidence and positivity cultivation in curricula. Indeed, many advocate that entrepreneurial schooling builds knowledge and competencies across genders (European Commission, 2008; Jones, 2014; Kuratko, 2005). Moreover, the attention to increasing women's participation is urged (Council of the European Union, 2014).

The confirmed TPB forecasts carry implications for female students in Ghana's secondary institutions including focusing less on rote examination, building student entrepreneurial capability beliefs to make founding seem achievable, and bridging curricular gaps between secondary and tertiary entrepreneurship education.

Nonetheless, there are limitations to the study. We validated the model solely on Ghanaian students, constraining generalizability. We omitted other potential theories. We did not examine cultural and contextual aspects influencing entrepreneurial intentions, limiting applicability in diverse settings. Furthermore, we did not establish predictive validity regarding actual entrepreneurial behaviours. We relied on self-reported data from a questionnaire, which may be subject to response biases and may not fully capture the complexity of the factors influencing entrepreneurial intentions. Finally, the convenience sampling method may diminish the findings' generalizability.

Future studies may use other models such as the entrepreneurial event model (EEM) or self-efficacy theory and an extension of the study in other countries.

REFERENCES

Ackah, C., Görg, H., Hanley, A., & Hornok, C. (2024). Africa's businesswomen – underfunded or underperforming?. *Small Business Economics*, *62*(3), 1051-1074. https://doi.org/10.1007/s11187-023-00792-0

Abbasianchavari, A., & Moritz, A. (2021). The impact of role models on entrepreneurial intentions and behavior: a review of the literature. *Management Review Quarterly*, *71*, 1-40.https://doi.org/10.1007/s11301-019-00179-0

Agyire-Tettey, F., Ackah, C.G., & Asuman, D. (2018). Gender and returns to entrepreneurship in Africa. *International Journal of Social Economics, 45*(12), 1609-1630. https://doi.org/10.1108/IJSE-11- 2017- 0549

Ahn, K., & Winters, J.V. (2023). Does education enhance entrepreneurship?. *Small Business Economics*, *61*(2), 717-743. https://doi.org/10.1007/s11187-022-00701-x

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179-211. https://doi.org/10.1080/10410236.2018.1493416

Ajzen, I. (2001). Nature and Operation of Attitudes. *Annual Review of Psychology*, *52*(1), 27-58. https://doi.org/10.1146/annurev.psych.52.1.27

Amofah, K., & Saladrigues, R. (2022). Impact of Attitude Towards Entrepreneurship Education and Role Models on Entrepreneurial Intention. *Journal of Innovation and Entrepreneurship*, *11*(36), 30. https://doi.org/10.1186/s13731-022-00197-5

Amofah, K., Saladrigues, R., & Akwaa-Sekyi, E. K. (2020). Entrepreneurial intentions among MBA students. *Cogent Business and Management*, *7*(1), https://doi.org/10.1080/23311975.2020.1832401

Amofah, K., Dziwornu, M.G., Rachwał, T., Saladrigues, R., & Agyarko, F.F. (2023). Transition from entrepreneurship education to entrepreneurial intention: a cross-cultural effect. *Czasopismo Geograficzne/Geographical Journal, 94*(3), 533-552. https://doi.org/10.12657/czageo-94-20

Amofah, K., Dziwornu, G.M., Rachwał, T., Saladrigues, R., & Agyarko, F.F. (2024). Environmental support and entrepreneurial intentions: Exploring the mediating role of attitude and behavioural control and moderating effect of family background. *Entrepreneurial Business and Economics Review, 12*(1), 1-12. https://doi.org/10.15678/EBER.2023.1201

Andrade, F.L. de, & Luísa Margarida Cagica Carvalho (2023). Entrepreneurial Intention of University Students under the Perspective of the Theory of Planned Behaviour: Integrative Literature Review. *Administrative Sciences*, *13*(242), 17. https://doi.org/10.3390/admsci13110242

Anwar, I., & Saleem, I. (2019). *Entrepreneurial Intention among Female University Students: A Step towards Economic Inclusion through Venture Creation,* In M.S. Raste, B. Bhattacharya & S. Bhattacharya (Eds.). *Strategies and Dimensions for Women Empowerment* (pp. 331-342), Australia, Central West Publishing.

Asiegbor, I.K., Dakeh, M., Hayibor, F., Klutse, K., Aidoo-Buami, M., & Osei, R. (2016). CASE STUDY: Promoting Gender Equality in Ghana through Girls' Clubs and Role Model Outreach, United Nations Girls' Education Initiative

Aterido, R., Hallward-Driemeier, M., & Pages, C. (2011). Big constraints to small firms' growth? Business environment and employment growth across firms. *Economic Development and Cultural Change, 59*(3), 609-647. https://doi.org/10. 1086/ 658349

Athayde, R. (2009). Measuring Enterprise Potential in Young People. *Entrepreneurship Theory and Practice*, *33*(2), 481-501. https://doi.org/10.1111/j.1540-6520.2009.00300.x

Athayde, R. (2012). The impact of enterprise education on attitudes to enterprise in young people: An evaluation study. *Education and Training*, *54*(8), 709-726. https://doi.org/10.1108/00400911211274846

Bae, T.J., Qian, S., Miao, C., & Fiet, J.O. (2014). The Relationship Between Entrepreneurship Education and Entrepreneurial Intentions: A Meta-Analytic Review. *Entrepreneurship: Theory and Practice*, *38*(2), 217-254. https://doi.org/10.1111/etap.12095

Bazan, C., Shaikh, A., Frederick, S., Amjad, A., Yap, S., Finn, C., & Rayner, J. (2019). Effect of memorial university's environment & support system in shaping entrepreneurial intention of students. *Journal of Entrepreneurship Education*, *22*(1), 1-35. https://doi.org/10.1108/NEJE-05-2019-0026

Bergman, N., Rosenblatt, Z., Erez, M., & De-Haan, U. (2011). Gender and the effects of an entrepreneurship training programme on entrepreneurial self-efficacy and entrepreneurial knowledge gain. *International Journal of Entrepreneurship and Small Business*, *13*(1), 38-54. https://doi.org/10.1504/IJESB.2011.040415

Bouarir, H., Diani, A., Boubker, O., & Rharzouz, J. (2023). Key Determinants of Women's Entrepreneurial Intention and Behavior: The Role of Business Opportunity Recognition and Need for Achievement. *Administrative Sciences*, *13*(2), 19. https://doi.org/10.3390/admsci13020033

Brush, C., Edelman, L.F., Manolova, T., & Welter, F. (2019). A gendered look at entrepreneurship ecosystems. *Small Business Economics*, *53*(2), 393-408. https://doi.org/10.1007/s11187-018-9992-9

Buame, S.C.K., Asempa, N.A., & Acheampong, G. (2013). Exploring the skills, knowledge and attitudes of successful female entrepreneurs in Ghana. *Management Science Letters*, *3*(2), 395-404. https://doi.org/10.5267/j.msl.2012.11.030

Bullough, A., Hechavarria, D., Brush, C., & Edelman, L. (Eds.). (2019). *High-growth women's entrepreneurship programs, policies and practices*. Cheltenham: Edward Elgar Publishing.

Cho, Y., Li, J., & Chaudhuri, S. (2020). Women Entrepreneurs in Asia: Eight Country Studies. *Advances in Developing Human Resources*, *22*(2), 115-123. https://doi.org/10.1177/1523422320907042

do Paço, A.M.F., Ferreira, J.M., Raposo, M., Rodrigues, R.G., & Dinis, A. (2011). Behaviours and entrepreneurial intention: Empirical findings about secondary students. *Journal of International Entrepreneurship*, *9*(1), 20-38. https://doi.org/10.1007/s10843-010-0071-9

Doepke, M., Tertilt, M., & Voena, A. (2012). The economics and politics of women's rights. *Annual Review of Economics*, *4*(2009), 339-372. https://doi.org/10.1146/annurev-economics-061109-080201

Elsayed, A., Namoro, S.D., & Roushdy, R. (2021). Empowering women in conservative settings: evidence from an intervention in rural Egypt. *Review of Economics of the Household*. https://doi.org/10.1007/s11150-021-09576-5

Edigbo, A.O., Ogbo, A., Onwe, C.C., Igwe, A., & Okafor, L.C. (2021). Mediating role of entrepreneurial alertness between entrepreneurial exposures and entrepreneurial intentions. *Entrepreneurial Business and Economics Review, 9*(4), 67-84. https://doi.org/10.15678/EBER.2021.090405

Entrialgo, M., & Iglesias, V. (2016). The moderating role of entrepreneurship education on the antecedents of entrepreneurial intention. *International Entrepreneurship and Management Journal, 12*(4), 1209-1232. https://doi.org/10.1007/s11365- 016- 0389-4

European Commission (2008). Entrepreneurship in higher education, especially in non-business studies. Retrieved from http://ec.europa.eu/enterprise/newsroom/cf/itemdetail.cfm?item_id=3366 on November 5, 2023.

Esfandiar, K., Sharifi-Tehrani, M., Pratt, S., & Altinay, L. (2019). Understanding entrepreneurial intentions: A developed integrated structural model approach. *Journal of Business Research*, *94*(August 2016), 172-182. https://doi.org/10.1016/j.jbusres.2017.10.045

Fagerberg, J., & Srholec, M. (2008). National innovation systems, capabilities and economic development. *Research Policy*, *37*, 1417-1435. https://doi.org/10.1016/j.respol.2008.06.003

Fallatah, M.I., & Ayed, T.L. (2023). "Entrepreneurizing" College Programs to Increase Entrepreneurial Intentions: A Mediation Framework. *Administrative Sciences*, *13*(2), https://doi.org/10.3390/admsci13020050

Fauzi, M.A., Sapuan, N.M., & Zainudin, N.M. (2023). Women and female entrepreneurship: Past , present , and future trends in developing countries. *Entrepreneurial Business and Economics Review*, *11*(3), 57-75.

Fayolle, A., & Liñán, F. (2014). The future of research on entrepreneurial intentions. *Journal of Business Research*, *67*(5), 663-666. https://doi.org/10.1016/j.jbusres.2013.11.024

Hechavarria, D., Bullough, A., Brush, C., & Edelman, L. (2019). High-Growth Women's Entrepreneurship: Fueling Social and Economic Development. *Journal of Small Business Management*, *57*(1), 5-13. https://doi.org/10.1111/jsbm.12503

Huber, L.R., Sloof, R., & Van Praag, M. (2014). The effect of early entrepreneurship education: Evidence from a field experiment. *European Economic Review*, *72*, 76-97. https://doi.org/10.1016/j.euroecorev.2014.09.002

ILO. (2020). International labor organization: gender equality. Retrieved from https://www.ilo.org/global/topics/equality-anddiscrimination/gender-quality/lang%2D%2Den/index.htm on July 10, 2020.

İyigün, N.Ö. (2015). What could Entrepreneurship do for Sustainable Development? A Corporate Social Responsibility-Based Approach. *Procedia – Social and Behavioral Sciences*, *195*, 1226-1231. https://doi.org/10.1016/j.sbspro.2015.06.253

Jha, P., Makkad, M., & Mittal, S. (2018). Performance-oriented factors for women entrepreneurs – a scale development perspective. *Journal of Entrepreneurship in Emerging Economies*, *10*(2), 329-360. https://doi.org/10.1108/JEEE-08-2017-0053

Jones S (2014). Gendered discourses of entrepreneurship in UK higher education: The fictive entrepreneur and the fictive student. *International Small Business Journal* 32(3), 237-258. https://doi.org/10.1177/026624261245393

Johansen, V., & Schanke, T. (2013). Entrepreneurship Education in Secondary Education and Training. *Scandinavian Journal of Educational Research*, *57*(4), 357-368. https://doi.org/10.1080/00313831.2012.656280

Khan, R., Anwar, I., Thoudam, P., Islam, K.M.B., & Saleem, I. (2020). Entrepreneurial intention among female university students: examining the moderating role of entrepreneurial education. *Journal for International Business and Entrepreneurship Development*, *12*(4), 217. https://doi.org/10.1504/jibed.2020.10032497

Kariv, D. (2013). *Female Entrepreneurship and the New Venture Creation: An International Perspective*. London: Routledge.

Kelley, D., Bosma, N., & Amoros, J.E. (2010). Global entrepreneurship monitor: 2010 Global Report. Retrieved from https://entre prenorskap sforum.se/wp- conte nt/uploads/2011/02/GEM- 2010- Global- Report.Pdf on July 2, 2023.

Kilar, W., & Rachwał, T. (2019). Changes in Entrepreneurship Education in Secondary School under Curriculum Reform in Poland. *Journal of Intercultural Management, 11*(2) 73-105. https://doi.org/10.2478/joim-2019-0010

Kim, M.S., Huruta, A.D., & Lee, C.W. (2022). Predictors of Entrepreneurial Intention among High School Students in South Korea. *Sustainability (Switzerland)*, *14*(21). https://doi.org/10.3390/su142114168

Korpysa, J., & Waluyohadi (2022). Creative entrepreneurial intention of students in Indonesia: Implementation the theory of planned behaviour. *International Entrepreneurship Review, 8*(3), 53-67. https://doi.org/10.15678/IER.2022.0803.04

Krakauer, P.V. de C., de Moraes, G.H.S.M., Coda, R., & Berne, D. de F. (2018). Brazilian women's entrepreneurial profile and intention. *International Journal of Gender and Entrepreneurship*, *10*(4), 361-380. https://doi.org/10.1108/IJGE-04-2018-0032

Kuratko, D.F. (2005). The Emergence of Entrepreneurship Education: Development, Trends, and Challenges. *E T & P*, 577-597. https://doi.org/10.1111/j.1540-6520.2005.00099.x

La Barbera, F., & Ajzen, I. (2020). Understanding Support for European Integration Across Generations : A Study Guided by the Theory of Planned Behavior. *Europe's Journal of Psychology*, *16*(3), 437-457. https://doi.org/10.5964/ejop.v16i3.1844

Le, T.T., Nguyen, T.H., Ha, S.T., Nguyen, Q.K., Tran, N.M., & Duong, C.D. (2023). The effect of entrepreneurial education on entrepreneurial intention among master students: prior self-employment experience as a moderator. *Central European Management Journal*, *31*(1), 30-47. https://doi.org/10.1108/CEMJ-10-2021-0116

Liñán, F. (2004). Intention-based models of entrepreneurship education. *Piccola Impresa / Small Business*, *2004*(3), 11-35.

Liñán, F., & Chen, Y. (2009). Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions Francisco. *Entrepreneurship Theory & Practice*, 593-617. https://doi.org/10.1111/j.1540-6520.2009.00318.x

Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal*, *11*(4), 907-933. https://doi.org/10.1007/s11365-015-0356-5

Liu, M., Gorgievski, M.J., Zwaga, J., & Paas, F. (2023). How entrepreneurship program characteristics foster students' study engagement and entrepreneurial career intentions: A longitudinal study. *Learning and Individual Differences*, *101*(May 2022), 102249. https://doi.org/10.1016/j.lindif.2022.102249

Longva, K.K., & Foss, L. (2018). Measuring impact through experimental design in entrepreneurship education: A literature review and research agenda. *Industry and Higher Education*, *32*(6), 358-374. https://doi.org/10.1177/0950422218804912

Looi, K.H., & Khoo-lattimore, C. (2015). Undergraduate students' entrepreneurial intention : Born or made? *International Journal. Entrepreneurship and Small Business*, *26*(1). https://doi.org/10.1504/IJESB.2015.071317

Escolar-Llamazares, M.C., Luis-Rico, I., de la Torre-Cruz, T., Herrero, Á., Jiménez, A., Palmero-Cámara, C., & Jiménez-Eguizábal, A. (2019). The Socio-educational, Psychological and Family-Related Antecedents of Entrepreneurial Intentions among Spanish Youth. *Sustainability, 11*(5), 1252. https://doi.org/10.3390/su11051252

Malebana, M.J., & Mahlaole, S.T. (2023). Prior entrepreneurship exposure and work experience as determinants of entrepreneurial intentions among South African university of technology students. *Frontiers in Psychology*, *14*(July), 1-14. https://doi.org/10.3389/fpsyg.2023.1176065

Malebana, M.J., & Mothibi, N.H. (2023). Relationship between prior entrepreneurship exposure and entrepreneurial intention among secondary school learners in Gauteng, South Africa. *Journal of Innovation and Entrepreneurship*, *12*(1), 43. https://doi.org/10.1186/s13731-023-00309-9

Maresch, D., Harms, R., Kailer, N., & Wimmer-Wurm, B. (2016). The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technological Forecasting and Social Change*, *104*, 172-179. https://doi.org/10.1016/j.techfore.2015.11.006

Martin, B.C., McNally, J.J., & Kay, M.J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing*, *28*(2), 211-224. https://doi.org/10.1016/j.jbusvent.2012.03.002

Martínez-Gregorio, S., Badenes-Ribera, L., & Oliver, A. (2021). Effect of entrepreneurship education on entrepreneurship intention and related outcomes in educational contexts: a meta-analysis. *International Journal of Management Education*, *19*(3), 100545. https://doi.org/10.1016/j.ijme.2021.100545

Martínez-Gregorio, S., & Oliver, A. (2022). Measuring Entrepreneurship Intention in Secondary Education: Validation of the Entrepreneurial Intention Questionnaire. *Journal of Psychoeducational Assessment*, *40*(4), 499-513. https://doi.org/10.1177/07342829211069222

Matsheke, O., & Dhurup, M. (2017). Entrepreneurial-related Programmes and Students' Intentions to Venture into New Business Creation: Finding Synergy of Constructs in a University of Technology. *Science, Technology and Society*, *22*(2), 259-283. https://doi.org/10.1177/0971721817702287

McEachan, R.R.C., Conner, M., Taylor, N.J., & Lawton, R.J. (2011). Prospective prediction of health-related behaviours with the theory of planned behaviour: A meta-analysis. *Health Psychology Review*, *5*(2), 97-144. https://doi.org/10.1080/17437199.2010.521684

Moreira, J., Marques, C. S., Braga, A., & Ratten, V. (2019). A systematic review of women's entrepreneurship and internationalization literature. *Thunderbird International Business Review*, *61*(4), 635-648. https://doi.org/10.1002/tie.22045

Moreno-Gómez, J., Gómez-Araujo, E., & Castillo-De Andreis, R. (2020). Parental role models and entrepreneurial intentions in Colombia: Does gender play a moderating role?. *Journal of Entrepreneurship in Emerging Economies*, *12*(3), 413-429. https://doi.org/10.1108/JEEE-04-2019-0048

Moriano, J.A., Gorgievski, M., Laguna, M., Stephan, U., & Zarafshani, K. (2012). A Cross-Cultural Approach to Understanding Entrepreneurial Intention. *Journal of Career Development*, *39*(2), 162-185. https://doi.org/10.1177/0894845310384481

Nabi, G., Linan, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education. *Academy of Management Learning & Education*, *16*(2), 277-299. 10.5465/amle.2015.0026

Nowiński, W., & Haddoud, M.Y. (2019). The role of inspiring role models in enhancing entrepreneurial intention. *Journal of Business Research*, *96*(June 2018), 183-193. https://doi.org/10.1016/j.jbusres.2018.11.005

Nunfam, V.F., Asitik, A.J., & Afrifa-Yamoah, E. (2022). Personality, Entrepreneurship Education and Entrepreneurial Intention Among Ghanaian Students. *Entrepreneurship Education and Pedagogy*, *5*(1), 65-88. https://doi.org/10.1177/2515127420961040

Ogden, J. (2003). Some problems with social cognition models: A pragmatic and conceptual analysis. *Health Psychology*, *22*(4), 424-428. https://doi.org/10.1037/0278-6133.22.4.424

Ortuño-Sierra, J., Ibort, E.G., Lopez, A.C., & Torres, J.M.D. (2021). Measuring entrepreneurship in adolescents at school: New psychometric evidence on the BEPE-A. *PLoS ONE*, *16*(4), 1-13. https://doi.org/10.1371/journal.pone.0250237

Owoo, N.S., Oduro, A.D., & Ackah, C. (2019). Exploring firm performance and growth among own-account and micro enterprises in Ghana. *International Journal of Entrepreneurship and Small Business, 38*(3), 294-311. https://doi.org/10.1504/ijesb.2019.103431

Padi, A., Ansah, W.O., & Mahmoud, M.A. (2022). Corporate entrepreneurship and employees' competencies: Do employees' perceived feasibility and desirability matter?. *Cogent Business and Management*, *9*(1), 13. https://doi.org/10.1080/23311975.2022.2102129

Padi, A., Dzisi, P.S., & Eshun, P.J.F. (2022). Entrepreneurship education in TVET institutions and entrepreneurial intentions of female students in Ghana: the social support factor. *Cogent Business and Management*, *9*(1). https://doi.org/10.1080/23311975.2022.2137954

Peterman, N.E., & Kennedy, J. (2003). Enterprise Education: Influencing Students' Perceptions of Entrepreneurship. *Entrepreneurship Theory and Practice*, *28*(2), 129-144. https://doi.org/10.1046/j.1540-6520.2003.00035.x

Rachwał, T., Kurek, S., & Boguś, M. (2016). Entrepreneurship Education at Secondary Level in Transition Economies: A Case of Poland. *Entrepreneurial Business and Economics Review, 4*(1), 61-81. https://doi.org/10.15678/EBER.2016.040105

Rauch, A., & Hulsink W. (2015). Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behavior. *Academic of Management Learning & Education*, *14*(2), 187-204. https://doi.org/10.5465/amle.2012.0293

Reissová, A., Šimsová, J., Sonntag, R., & Kučerová, K. (2020). The influence of personal characteristics on entrepreneurial intentions: International comparison. *Entrepreneurial Business and Economics Review*, *8*(4), 29-46. https://doi.org/10.15678/EBER.2020.080402

Rostam-Afschar, D. (2014). Entry regulation and entrepreneurship: a natural experiment in German craftsmanship. *Empirical Economics*, *47*(3), 1067-1101. https://doi.org/10.1007/s00181-013-0773-7

Roy, R., Akhtar, F., & Das, N. (2017). Entrepreneurial intention among science & technology students in India: extending the theory of planned behavior. *International Entrepreneurship and Management Journal*, *13*(4), 1013-1041. https://doi.org/10.1007/s11365-017-0434-y

Saleem, I., & Anwar, I. (2018). Effect of Entrepreneurial Education on Entrepreneurial Intention of Indian Students. *International Journal of Research*, *5*(12), 11.

Sánchez, J.C. (2013). The impact of an entrepreneurship education program on entrepreneurial competencies and intention. *Journal of Small Business Management*, *51*(3), 447-465. https://doi.org/10.1111/jsbm.12025

Schaub, M., & Tokar, D.M. (2005). The role of personality and learning experiences in social cognitive career theory q. *Journal of Vocational Behavior*, *66*, 304-325. https://doi.org/10.1016/j.jvb.2004.09.005

Sheeran, P., Gollwitzer, P.M., & Bargh, J.A. (2013). Health Psychology Nonconscious Processes and Health Nonconscious Processes and Health. *Health Psychology*, *32*(5), 460-473. https://doi.org/10.1037/a0029203

Scherer, R.F., Adams, J.S., Carley, S.S., & Wiebe, F.A. (1989). Role Model Performance Effects on Development of Entrepreneurial Career Preference. *Entrepreneurship Theory and Practice*, *13*(3), 53-72. https://doi.org/10.1177/104225878901300306

Schier, U.K. (2020). Female and male role models and competitiveness. *Journal of Economic Behavior and Organization*, *173*, 55-67. https://doi.org/10.1016/j.jebo.2020.03.001

Schott, T., Kew, P., & Cheraghi, M. (2015). *Future Potential - A GEM perspective on youth entrepreneurship 2015*. Retrieved from http://www.gemconsortium.org/report/49200 on August 10, 2020.

Schröder, E., & Schmitt-Rodermund, E. (2006). Crystallizing enterprising interests among adolescents through a career development program: The role of personality and family background. *Journal of Vocational Behavior*, *69*(3), 494-509. https://doi.org/10.1016/j.jvb.2006.05.004

Shahin, M., Ilic, O., Gonsalvez, C., & Whittle, J. (2021). The impact of a STEM-based entrepreneurship program on the entrepreneurial intention of secondary school female students. *International Entrepreneurship and Management Journal*, *17*(4), 1867-1898. https://doi.org/10.1007/s11365-020-00713-7

Sidi Ali, R. (2016). Feminist theory and its influence on female entrepreneur's growth intentions. *International Entrepreneurship Review, 2*(2), 27-42. Retrieved from https://ier.uek.krakow.pl/pm/article/view/1111 on August 10, 2020.

Strawser, J.A., Hechavarría, D.M., & Passerini, K. (2021). Gender and entrepreneurship: Research frameworks, barriers and opportunities for women entrepreneurship worldwide. *Journal of Small Business Management*, *59*(sup1), S1-S15. https://doi.org/10.1080/00472778.2021.1965615

UN Women. (2020). United Nations entity for gender equality and the empowerment of women. Retrieved from https://www.un.org/womenwatch/daw/daw/index.html on August 10, 2020.

Vamvaka, V., Stoforos, C., Palaskas, T., & Botsaris, C. (2020). Attitude toward entrepreneurship, perceived behavioral control, and entrepreneurial intention: dimensionality, structural relationships, and gender differences. *Journal of Innovation and Entrepreneurship*, *9*(1). https://doi.org/10.1186/s13731-020-0112-0

Wach, K., & Wojciechowski, L. (2016). Entrepreneurial Intentions of Students in Poland in the View of Ajzen's Theory of Planned Behaviour. *Entrepreneurial Business and Economics Review, 4*(1), 83-94. https://doi.org/10.15678/EBER.2016.040106

World Bank. (2007). World development report 2007: Development and the next generation. Washington DC: The World Bank.

Xu, X., Ni, H., & Ye, Y. (2016). Factors influencing entrepreneurial intentions of Chinese secondary school students: an empirical study. *Asia Pacific Education Review*, *17*(4), 625-635. https://doi.org/10.1007/s12564-016-9439-4

Yousafzai, S.Y., Saeed, S., & Muffatto, M. (2015). Institutional Theory and Contextual Embeddedness of Women's Entrepreneurial Leadership: Evidence from 92 Countries. *Journal of Small Business Management*, *53*(3), 587-604. https://doi.org/10.1111/jsbm.12179

Zamrudi, Z., & Yulianti, F. (2020). Sculpting Factors of Entrepreneurship among University Students in Indonesia. *Entrepreneurial Business and Economics Review, 8*(1), 33-49. https://doi.org/10.15678/EBER.2020.080102

Authors

The contribution share of authors is as follows: Kwaku Amofah – 25%, Michael Gameli Dziwornu – 25%, Tomasz Rachwał – 20%; Ramon Solé Saladrigues – 10%, Fred Fosu Agyarko – 20%.

Kwaku Amofah

Kwaku Amofah holds a PhD in Law and Business Administration from the University of Lleida, Spain. He is a Senior Lecturer and Head of the Distance Learning Centre at Sunyani Technical University, Ghana. His research interest include entrepreneurship, management, and strategic management.

Correspondence to: Kwaku Amofah, Distance Learning Centre, Sunyani Technical University, P.O. BOX 206, Sunyani, Ghana, e-mail: email: kwaku-amofah@stu.edu.gh

ORCID http://orcid.org/0000-0002-3944-5504

Michael Gameli Dziwornu

Michael Gameli Dziwornu holds a PhD in Urban Studies from the University of Milan-Bicocca, Italy. He is a Research Scientist at the Institute for Scientific and Technological Information (INSTI) of the Council for Scientific and Industrial Research (CSIR), Accra, Ghana. His research interests include economic geography, sustainable development, crime geography, and entrepreneurship.

Correspondence to: Michael Gameli Dziwornu, Institute for Scientific and Technological Information (INSTI) of the Council for Scientific and Industrial Research (CSIR), P.O. BOX M.32, Accra, Ghana, e-mail: m.dziwornu@campus.unimib.it

ORCID http://orcid.org/0000-0001-5004-5344

Tomasz Rachwał

Tomasz Rachwał, PhD, is a Professor of Economics and Economic Geography at the Department of International Trade of the Krakow University of Economics (KUE), Poland. He is also affiliated with the Centre for Strategic and International Entrepreneurship of KUE. He is a member of the editorial board of journals in the field of entrepreneurship and economic geography. His research interests include entrepreneurship education, entrepreneurial intentions of young people, the role of entrepreneurship in the development of local and regional systems, and socio-economic geography.

Correspondence to: Tomasz Rachwał, Department of International Trade, Krakow University of Economics, ul.Rakowicka 27, 31-510 Kraków, Poland, e-mail: Tomasz.Rachwal@uek.krakow.pl

ORCID http://orcid.org/0000-0002-2232-591X

Ramon Solé Saladrigues

Ramon Solé Saladrigues, PhD, is an Associate Professor of Financial Economy and Accounting at the University of Lleida, Spain. His research interests include economic and financial indicators, European convergence international accounting and accounting reform, entrepreneurship and business creation and university analytical accounting.

Correspondence to: Ramon Solé Saladrigues, University of Lleida, c/Jaume II, 73, 25001 Lleida, Spain, e-mail: ramon.saladrigues@udl.cat

ORCID http://orcid.org/0000-0003-3987-2511

Fred Fosu Agyarko

Fred Fosu Agyarko is a doctoral student in Statistics at the University of Ghana, Legon. He is also a Statistician at the Institute for Scientific and Technological Information (INSTI) of the Council for Scientific and Industrial Research (CSIR), Accra, Ghana. His research interests include statistics of extremes, longitudinal data/repeated measures, and mixed models/random-effects models.

Correspondence to: Fred Fosu Agyarko, Institute for Scientific and Technological Information (INSTI) of the Council for Scientific and Industrial Research (CSIR), P.O. BOX M.32, Accra, Ghana, e-mail: ffagyarko@st.ug.edu.gh

ORCID http://orcid.org/0000-0002-6733-5409

Acknowledgements and Financial Disclosure

The article in the part co-authored by Tomasz Rachwał presents the result of Project no 020/EEZ/2023/POT financed from the subsidy granted to the Krakow University of Economics, Poland. We have no other funding to report.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright and License

Published by Krakow University of Economics – Krakow, Poland

Ministry of Education and Science
Republic of Poland

The journal is co-financed in the years 2022-2024 by the Ministry of Education and Science of the Republic of Poland in the framework of the ministerial programme “Development of Scientific Journals” (RCN) on the basis of contract no. RCN/SP/0251/2021/1 concluded on 13 October 2022 and being in force until 13 October 2024.