

Longitudinal Analysis of Relationship between Entrepreneurial Mindset Skills Training and Entrepreneurial Knowledge Improvement among Adolescent Girls and Young Women in South Africa

Jean Damascene Mvunabandi*

Ferina Marimuthu

Haruna Maama

Accounting and Informatics, Durban University of Technology, South Africa

*Author correspondence: jeanM2@dut.ac.za

Abstract. Motivated by the lack of empirical research on entrepreneurial mindset knowledge training among adolescent girls and young women (AGYW) in South Africa, this article examined the entrepreneurial knowledge among 3584 adolescent girls and young women from four provinces, i.e. KwaZulu Natal, Mpumalanga, Eastern Cape and Western Cape in South Africa. The article also assessed how entrepreneurial mindset and skills training could drive the development and growth of AGYWs mindsets towards entrepreneurship and link them with employment entrepreneurship opportunities. This study adopted quantitative and descriptive research approaches via longitudinal data collection. Secondary data collected using a questionnaire survey during entrepreneurial mindset and skills training from July-October 2021 by the large anonymized not-for-profit organization in South Africa was used for data analysis. Robustness analysis was performed using descriptive statistics using SPSS version 27.0. The findings from the empirical part of this research proved that adolescent girls and young women significantly improved their knowledge entrepreneurially throughout the training. This article contributes to the current body of knowledge as it filled in the gap and contributed significantly to the entrepreneurial mindset skill and knowledge improvement among adolescent girls and young women in South Africa.

Keywords: Business venture; Entrepreneurial mindset; Adolescent girls and young women (AGYW); Pull factors; Push factors.

Abstrak. Dimotivasi oleh kurangnya penelitian empiris tentang pelatihan pengetahuan pola pikir kewirausahaan di kalangan remaja putri dan perempuan muda (RPPM) di Afrika Selatan, artikel ini mengkaji pengetahuan kewirausahaan di antara 3.584 remaja putri dan perempuan muda dari empat provinsi di wilayah Afrika Selatan, yaitu KwaZulu Natal, Mpumalanga, Eastern Cape, dan Western Cape. Artikel ini juga menilai bagaimana pola pikir kewirausahaan dan pelatihan ketrampilan dapat mendorong pengembangan dan pertumbuhan pola pikir RPPM menuju kewirausahaan dan menghubungkannya dengan peluang lapangan kerja di bidang kewirausahaan. Studi ini

mengadopsi pendekatan penelitian kuantitatif dan deskriptif melalui pengumpulan data jangka panjang. Data sekunder yang dikumpulkan menggunakan survei kuesioner selama pelatihan pola pikir dan ketrampilan kewirausahaan dari bulan Juli-Oktober 2021 oleh organisasi nirlaba besar yang dianonimkan di Afrika Selatan digunakan untuk analisis data. Ketepatan analisis dilakukan dengan menggunakan statistik deskriptif dengan bantuan SPSS versi 27.0. Temuan di dalam penelitian empiris ini membuktikan bahwa RPPM meningkat pengetahuan kewirausahaan mereka secara signifikan selama pelatihan. Artikel ini berkontribusi pada menyediakan kumpulan pengetahuan saat ini untuk mengisi kesenjangan dan berkontribusi secara signifikan terhadap ketrampilan pola pikir kewirausahaan dan peningkatan pengetahuan di kalangan RPPM di Afrika Selatan.

Kata kunci: Business venture; Faktor penarik; Faktor pendorong; Paradigma kewirausahaan; Remaja putri dan perempuan muda (RPPM).

Article Info:

Received: August 10, 2022

Accepted: October 7, 2022

Available online: November 21, 2022

DOI: <http://dx.doi.org/10.30588/jmp.v12i1.1164>

BACKGROUND

Entrepreneurial capability and knowledge are innovative practices which lead to the discovery of business opportunities and set up the right behaviour to effectively and fully exploit those marketable and profitable business opportunities (Davis, Hall, & Mayer, 2016; Kanonuhwa, Rungani, & Chimucheka, 2018). Given this, unemployment due to a lack of entrepreneurial knowledge among adolescent girls and young women (AGYWs) is a subject that has received considerable attention globally, particularly in South Africa (Dawson, 2021). For instance, statistics show that the global unemployment rate from 2010 to 2020 is escalating, representing 6,47% in 2021 (2017=5.55%; 2018=5.37%; 2019=5.37%, and in 2020=6.7% (Huikari & Korhonen, 2021). Shockingly, the statistics of South Africa's Quarter Labour Force Survey (QLFS) report released in June 2021 revealed that South Africa's unemployment rate reached 35.3%. The rising unemployment rate has forced the developed and developing countries to tackle its consequences (Anastasiou, Argiri, Komninos, Dermatis, & Papageorgiou, 2021; Mutarubukwa, 2021).

The high unemployment rate in South Africa is due to the lack of entrepreneurial mindsets and skills among adolescent girls and young women (Ijeoma & Ndedi, 2021). Worse still, unemployment among these particular economic segments is a global pandemic that continues to marginalize AGYWs in participating in inclusive development and growth (Chitiga, Henseler, Mabugu, & Maisonnave, 2021). This has led to the acknowledgement that entrepreneurs are essential for the country's economy. As a result, the South African government has recognised the crucial role of developing and supporting entrepreneurs, especially young women.

The government's focus over the past few years has been on training entrepreneurs of the previously disadvantaged population. However, AGYWs, who are the majority and the nation's future, have been excluded and are seen as newcomers to the game of entrepreneurship and therefore do not have adequate entrepreneurial knowledge to start

and grow businesses (Ulrich, 1997). In contrast, Valla (2012) argues that South Africans are generally not educated to become entrepreneurs but to enter the labour market as employees and consumers of existing jobs instead of creators of new jobs. Meanwhile, Smith-Hunter and Boyd (2004) report an overall lack of robust entrepreneurial elements in the education system in South Africa and a lack of entrepreneurial mindset and skills among AGYWs. Despite this, it is acknowledged that the development of entrepreneurial spirit, knowledge and skills among AGYWs could reduce unemployment among the youth and promote wealth creation (Botha, Nieman, & Van Vuuren (2007).

Schindehutte, Morris, and Kuratko (2000) identified the lack of entrepreneurial awareness, understanding, mindsets, training and education as the South African entrepreneurs' most frequently mentioned weakness. Entrepreneurial knowledge is viewed as a powerful engine and accelerator for economic development; however, the literature survey indicates that it is still mainly under-researched among young women who encounter problems, barriers and constraints (Meredith & Barrett, 2019; O'Neill & Viljoen, 2016). Despite expanding research on entrepreneurship, Soriano and Huarng (2013) point out entrepreneurs' attention, motivation, and professional orientation could lead to high entrepreneurial performance. Previous studies in South Africa have examined women entrepreneurs in different situations by concentrating on the challenges faced by women entrepreneurs in Gauteng Province of South Africa (Adhikary, Rai, & Rajaratnam, 2016). In addition, Ahwireng-Obeng (2003) focused on an overview of barriers to women entrepreneurs in South Africa and concluded that much more could be learned and gained through entrepreneurial training that aligns with capacity building than technical and financial assistance and consulting services. Additionally, evidence shows a strong positive and significant correlation between networking women with business opportunities through training intervention and their entrepreneurial performance (Le Roux, 2006).

Some studies document challenges that inhibit entrepreneurial knowledge and its role in promoting entrepreneurship performance around the globe (Al Mamun, Fazal, & Muniady, 2019). First, there is a lacuna in studies that measure the entrepreneurial capability profile (ECP) among adolescent girls and young women. The second is a lack of empirical studies on entrepreneurial performance among adolescent girls and young women. The other problems include the lack of business skills and entrepreneurial training models for adolescent girls and young women and a lack of critical theoretical and empirical models on entrepreneurial knowledge barriers facing adolescent girls and young women. These four problems cause confusion in the way entrepreneurial capability and knowledge among adolescent girls and young women is understood and interpreted globally and in the South African context. Addressing these problems is of utmost importance to achieve entrepreneurial performance among AGYWs, particularly in South Africa and globally. Hence, the fundamental motivation behind this investigation is to fill this gap.

It is therefore essential to provide a sequenced process for preparing AGYWs to succeed in income-generating activities, strengthen their self-sustenance, enhance all necessary entrepreneurial skills and practical knowledge and link them with employment entrepreneurship opportunities. There is an urgent need to examine AGYWs entrepreneurial knowledge and training needs and whether crucial role players in South Africa could look after these needs. The objective of this paper was to examine the baseline (pre-test answers) against the endline survey (post-test answers) of the

entrepreneurial mindsets, knowledge and skills among 3584 AGYWs from four provinces of South Africa, namely: Eastern Cape, Western Cape, Mpumalanga and KwaZulu-Natal surveyed from July to October 2021. The study also assessed how entrepreneurial mindset and skills training could drive the development and growth of AGYWs mindsets towards entrepreneurship and link them with employment entrepreneurship opportunities.

The paper statistically proved that entrepreneurial training intervention effectively improves AGYWs knowledge entrepreneurially. The relevancy of entrepreneurial training was examined and measured and proved at all levels of significant in improving entrepreneurial mindset skills and knowledge as introduced by Hochenadel and Finamore (2015). This paper contributes to the current body of knowledge by highlighting the crucial role of considering sequenced entrepreneurial mindset skills training among AGYWs, but more globally on the entrepreneurial training process model. The framework developed from this paper is also relevant to improving the entrepreneurial spirit, skills and knowledge of AGYWs. These contributions are crucial for augmenting entrepreneurial training and education programmes that are effective and relevant, thereby improving and boosting the entrepreneurial ability and understanding of AGYWs.

THEORETICAL REVIEW

Conceptual Issues

i. The Concept of Entrepreneurship

There is no single definition of an entrepreneur and no single profile can represent today's entrepreneur. While entrepreneurship has been widely defined, the definition below enjoys universal support and has been widely used. It is defined as a creative activity where materials, capital, technology and labour are mobilised to offer marketable innovative products and services to customers (Holt, 2018). Saxena (2021) also defines an entrepreneur as a person who recognises and seizes business opportunities; converts these opportunities into marketable ideas; adds value through time, effort and money; assumes the risks to implement these ideas; and realizes the reward from these efforts.

Holt (2018) further explained that entrepreneurship is the act of noticing the profit opportunity that has previously gone unnoticed. Therefore, an entrepreneur notices business opportunities that are marketable and profitable. In supporting Holt (2018) views, Billingsley, Lipsey, Burnette, and Pollack (2021) add that an entrepreneur is someone who sees a gap in the market and then start a new business to meet those identified needs.

The above definitions were challenged by researchers such as Holcombe (2021), who argued that entrepreneurs are identified by the following entrepreneurial traits: (1) innovators, (2) creators, (3) enterprise settlers, (4) dynamos of economic system, (5) detectors of opportunities, (6) moderates risk takers, (7) need for achievement, (8) (independent, (9) tenacious, (10) good users of resources, (11) able to tolerate ambiguity and uncertainty, (12) energetic, (13) self-confident, (14) committed to long term results, (15) tendency to set high standards, original, and (16) results oriented. Gouvea, Kapelianis, Montoya, and Vora (2021) concur adding that, an entrepreneur operates in

one of the following areas: introduces a new or improved product or service, introduces a new production or marketing method; opens a new market; uses a new source of supply of raw materials or other components, and creates a new organization.

ii. Entrepreneurial mindset theory and measurement of entrepreneurial knowledge

The concept of entrepreneurial mindset was initially discussed by Johnson (2009) who described entrepreneurial mindset as a concept that is being gradually emerging in the field of entrepreneurship and plays a vital role in the process of nurturing the entrepreneurial skills and capabilities for AGYWs. Pfeifer, Šarlija, and Zekić Sušac (2019) introduced the definition of entrepreneurial mindset as the ability to sense, act and mobilise resources under uncertainty condition to fully exploit business opportunities. Mutarubukwa (2021) supported these views and adds that the development of creative and innovative knowledge and mindset within an organization is highly relevant and suitable to set up innovation, take advantage of the market and add higher value to the business. Schjoedt and Shaver (2017) provided empirical support to these views and conclude that entrepreneurial knowledge and mindset development is strongly connected to personality, cognitive and metacognitive abilities.

Schumpeter (1954) grouped literature on entrepreneurial mindset and connected innovation by entrepreneur into five components, including the introduction of new products, introduction of new methods of application, the opening of new market, the takeover of source of supply of raw material, and the carrying out the new organization of industry. Mathisen and Arnulf (2016) agree with Schumpeter's view, stating that entrepreneurial mindset is based on the following three factors: the ability to sense, the ability to act rapidly, and the ability to mobilise resources even under unsettled conditions. Moreover, according to Mathisen and Arnulf (2019) the perception of an entrepreneurial mindset as growth-oriented perspective is another way to define it.

Bosman and Fernhaber (2018) provide evidence that entrepreneurial mindset is a frame of mind for a person oriented towards an entrepreneurial mindset of creativity, innovation and business opportunities that lead to successful organizational wealth. Bosman and Fernhaber (2018), further add that it allows entrepreneurs to make realistic decisions in the face of uncertainty. as a result, entrepreneurial behaviour is based on a set of values and beliefs and specific needs that provide intrinsic motivation and self determination to engage in entrepreneurial behaviour (Bellotti et al., 2014). From the foregoing discussion, entrepreneurial action can be summarised as consisting of aspects of entrepreneurial behaviour such as proactive, competitive, innovative, risk taking, and independent, risky, forming new organization, a new subsidiary or an additional company and potential growth in line with strategic objectives or broad vision (Zhao and Seibert (2006).

iii. Development of Entrepreneurial Mindset

Davis et al. (2016) grouped empirical literature on entrepreneur's traits which are particularly connected to personality into five areas: (1) the need for achievement and internal locus of control, (2) calculated risk taking, (3) tolerance of ambiguity, (4) creativity, (4) need for autonomy and (5) self-confidence. Faltin (2020) articulated Patterns of Adaptive Learning Scales (PALS) as a set of scales that have been developed in the education sector for the identification of personality traits such as cog-

nitive abilities, personal achievement, and goal orientation, self-handicapping strategies, efficacy, avoiding of unknown or novel options and self-presentation.

The theory of goal motivation and mindset is formulated in the work of Thompson (2021), Rucker and Galinsky (2016) supported the theory of goal motivation in setting up new venture business. Pidduck, Clark, and Lumpkin (2021) discovered that the personality trait plays a robust role in the process of comprehending entrepreneurship but also support that this is a role where other variables must be included. Supporting this, Rucker and Galinsky (2016) point out the real correlation between the personality traits of the big five model and the success of entrepreneurial activities. However, Leutner, Ahmetoglu, Akhtar, and Chamorro-Premuzic (2019) argue that the innovativeness traits of the big five model foretell a better outcome compared to the conscientiousness and extroversion traits.

Subsequent literature by Bellotti et al. (2014) largely supported the notion of entrepreneurial mindset and concluded that entrepreneurial mindset regroups the use of knowledge structure to make assessments, the judgements or decisions, venture creations, and growth and these can contribute significant to the field of entrepreneurship.

iv. Theory of Mindset: Fixed and Growth Mindset

Hochanadel and Finamore (2015) propounded fixed and growth mindset theories, commonly used to refer to the old designation of entity and incremental framework. However, Billingsley et al. (2021) stated that a person could either hold a fixed mindset or growth mindset and not both. Hochanadel and Finamore (2015) initially uncovered that a fixed mindset, makes a person believes in his/her own qualities that are considered to be carved in the stone and also unlikely to change. However, Story and Barbuto Jr. (2019) dismissed the notion that growth mindset deals with belief that a person may adopt a mindset which can grant changes and growth through his or her effort and provided a theoretical explanation. The mindset theory therefore describes whether a person responds to challenges, effort and obstacles and the success of others in a consciously or unconsciously manner.

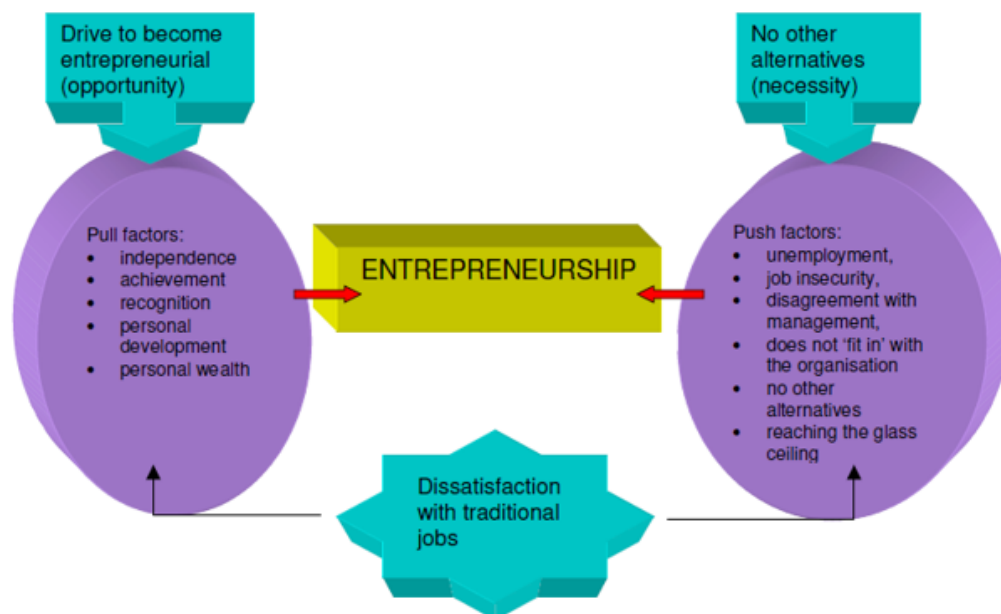
Pidduck, Clark, and Lumpkin (2021) soundly argued that, a person with low confidence and fixed mindset will come out with low performance goals as results. Pidduck et al. (2021) further argued that a person will face challenges in helpless characteristics manner pattern of typical behaviours, feelings and thoughts.

v. Review of Empirical Studies

Literature on entrepreneurial knowledge and skills reveal that one of the biggest barriers facing South Africa entrepreneurial drive is the lack of sequenced training, development and improvement of the entrepreneurial knowledge and skills among young people (Ahwireng-Obeng, 2003). Many researchers such as Schumpeter (1954), Holt's (2018), Drucker (2014), Say (2015) and Wickham (2006) have contributed to the entrepreneurial mindset field. Kirzner (2015) states that, surprisingly little is known about women entrepreneurial mindset and their perceptions of their entrepreneurial careers and practices. However, this finding was not confirmed by Al Mamun et al. (2019) who argue that women entrepreneurship is an under-researched area with tremendous economic potential and one that require special attention. The issue has also been arisen in the debate about women entrepreneurship gap and Meredith and Barrett

(2019) argue that the rate of entrepreneurial activity among men is far higher than that among women. Similarly, Nafukho (2018) stresses that it is essential to encourage more South African women to pursue entrepreneurial ventures. The author further pointed out that particular barriers to the involvement of women in self-employment activities need to be hurriedly addressed.

In their research, Hay, Cox, Reynolds, Autio, and Bygrave (2017) found a wide gender gap in the middle-income countries and low gender gap in high-income countries. In a different study, Mboniyane and Ladzani (2021) uncovered the several barriers facing young women in South Africa, chiefly among them was the inability to fully exploit their economic potential by both businesses and government. Such barriers have been documented in many papers and articles, including a report compiled by the Africa Project Development Facility (APDF) in 2020, which identified the following barriers: lack of access to finance, the high cost of finance, access to market, access to information on support of services available, gender discrimination bias and access to entrepreneurial mindset and skills training. However, Johnson (2009) contradicted the idea of Nafukho (2018) and presented that opportunity (pull factors) versus necessity (push factors) of women entrepreneurship or negative versus positive circumstances to give rise of entrepreneurial mindset and action. Therefore, Górány, Machová, Mura, and Zsigmond (2021) highlighted that one is "pushed" into entrepreneurship by job dissatisfaction and another "pulled" into entrepreneurship by perception of market opportunities. Górány et al. (2021) continued by stating that start-ups are generally thought to be triggered by individual factors. Similarly, Kirkwood (2009) highlights that the positive pull factors such as a career path offer entrepreneurial opportunities or an education that gives a person the adequate and appropriate knowledge and business opportunity while push factors are those which encourage entrepreneurship for reasons such as traditional jobs being less attractive or option. The push and pull factors of women entrepreneurial mindset are diagrammatically shown in the Figure 1.



Source: Neiman, Hough, and Neiuwenhuizen (2003:31).

Figure 1. The Push and Pull Factors of Women Entrepreneurial Mindset

As illustrated in the Figure 1, Neiman, Hough, and Neiwenhuizen (2003), briefly indicated that push factors include but not limited to: unemployment, job insecurity, disagreement with management, inability to fit in the organization, the inability to pursue a personal innovation in a conventional job, the limitations of financial rewards from conventional jobs, no other alternatives and reaching the glass ceiling among others. Neiman et al. (2003) further outline pull factors which stimulate people in traditional jobs to leave their current jobs to become entrepreneurs and these factors include: independence, achievement, recognition, personal development, personal wealth. The application of the above mentioned push and pull factors model developed by Neiman et al. (2003) to this research is that under this study under the component and theory of goal motivation is used to assess whether or not the push or pull factors could drive the development and growth of AGYWs mindsets towards entrepreneurship.

Wickham (2006) argues that women are keen to use sources of entrepreneurial training and business advice to act upon it and place a higher value on such advice than men do. Hendricks (2018) further argue that women are more likely than men to consult multiple sources of advice at start up. The authors suggest that the willingness of women proprietors to acquire formal business and entrepreneurial skills training and to develop non-formal management skills such as networking and flexibility it is of huge benefit for women entrepreneurs.

RESEARCH METHODOLOGY

This was a quantitative research project based on secondary data collected via longitudinal data collection at the large anonymized organization level based in Johannesburg, South Africa. Access to the organization's raw secondary data of which was captured into excel spreadsheet was granted on the condition of maintaining the anonymity of the organization and 3584 adolescent girls and young women participated in the survey, hence the need to protect their identity. Questionnaire instrument was developed by the organization's master trainer and it was grouped into two sections: Section A involved data on the demographic details of the respondents and section B comprised a range of questions to capture their levels of entrepreneurial mindset knowledge and skills. Pre-training surveys tests were conducted from the first day of the training programme, which was 2nd July 2022 in order capture AGYWs' initial entrepreneurship knowledge. An AGYW was deemed to have been trained through a sequenced process preparing AGYWs within July, August and October 2022 to succeed in income generating activities, strengthen their self-substance and expand their entrepreneurial knowledge and link them with employment entrepreneurship opportunities, when they have completed the entrepreneurship content module. Post-tests surveys were conducted on the 29th October. The researcher analysed the raw data pertaining to pre and post-tests in order to measure the knowledge improvement gained by the AGYWs in entrepreneurship training intervention framework.

The data was available to the researcher; hence no ethical clearance was required for the researcher to access data. The data set for this study contains longitudinal dimensions from 2nd July 2021(pre-tests data) to 29th October 2021 (post-tests data) as 3584 AGYWs across the four provinces i.e. Eastern Cape (EC), KwaZulu-Natal (KZN), Mpumalanga (MP) and Western Cape (WC) trained within that particular period of

time. The longitudinal quantitative surveys (pre-tests data of 2nd and 3rd July 2021 and post-tests data of 28th and 29th October 2021) enabled the investigator to measure the entrepreneurial mindset skills and knowledge among the participants of the study.

Pre- and post-tests were to measure the knowledge gained by the AGYWs in entrepreneurship training intervention framework. The pre-test was a set of questions given to participants before the training began in order to determine whether AGYWs were entrepreneurially knowledgeable or not and to measure their entrepreneurial mindset and skills level. Upon the completion of the training module, AGYWs were given a post-test questionnaire to answer the same set of questions. Comparing post-test scores to their pre-test scores enabled the researcher to examine whether the training was successful in increasing participants' knowledge entrepreneurially. This analysis involved all the 3584 (100%) respondents [AGYWs] who were trained. 654 participants' were from Western Cape, 2288 from Mpumalanga, 188 from Eastern Cape and 454 from KwaZulu Natal. Robustness analysis was performed on all AGYWs who participated in the surveys. The collated data from entrepreneurial mindset skills and knowledge questions were put into a binary variable in order to easily quantify the mean scores into two categories. The first category represents "Poorly entrepreneurially Knowledgeable" (not ideal answers) and the second category was captioned "Entrepreneurially Knowledgeable" (ideal answers).

Quantitative data was analysed using descriptive statistics where percentages, frequencies, standards deviations and means among the selected variables were estimated. Chi-Square test, linear regression analysis and Pearson correlation analysis were performed to determine whether there is a statistically significant relationship between the variables. The P-value were compared to the significance level and on that basis the null hypothesis was either rejected or not rejected. When a P-value is less than the significance level (0.05), the null hypothesis is rejected. If P-value is greater than or equal to the significance level (0.05) the null hypothesis is not rejected. The results were presented using tables.

RESULTS AND DISCUSSIONS

Reliability of Measurement Scales

The reliability of scales is the degree to which the items that make up the scale all measure the underlying attribute. This is known as internal consistency (Pallant, 2011). Pallant (2011) adds that reliability can be measured by means of Cronbach's Alpha, which provides an indication of the average correlation among all the items that make up the scale. The Cronbach's Alpha Reliability Statistics are presented in Table 1. Table 1 shows that the Cronbach's Alpha for the scales used in this study was .802, which suggests a high level of internal consistency. Ghauri and Grønhaug (2010) note that Cronbach's Alpha values of 0.7 and above indicate that a scale is reliable.

Table 1. Cronbach's Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.802	.808	9

Data Analysis

a. Demography of Respondents

Table 2 presents the data relating to the background information of the respondents. The Table 2 illustrates that 25.7% (n=920) of the respondents were between the ages of 18 and 19; 36.3% (n=1300) were aged 20 to 25; 20.6% (n=737) fell into the age group of 26 to 30; 16.6% (n=596) were between the ages of 31 and 35, and 0.9% (n=31) were over 35 years of age. Thus, the majority of the respondents were between 20 and 25 years old. Furthermore, the table illustrates that 454 (12.7%) respondents were from KwaZulu Natal, 654 (18.2%) respondents were from Western Cape, 188 (5.2%) respondents were from Eastern Cape, and 2,288 (63.8%) respondents were from Mpumalanga.

Table 2. Demographic Data of the Respondents

Response Type	Questionnaire Items	Respondents Rate
Age	18-19	920 (25.7%)
	20-25	1,300 (36.3%)
	26-30	737 (20.6%)
	31-35	596 (16.6%)
	Above 35	31 (0.9%)
Total		3,584 (100.0%)
Province	KZN	454 (12.7%)
	WC	654 (18.2%)
	EC	188 (5.2%)
	MP	2,288 (63.8%)
Total		3,584 (100.0%)
District	Alfred Nzo	85 (2.4%)
	Buffalo City	103 (2.9%)
	King Cetshwayo	333 (9.3)
	Ugu	121 (3.4%)
	Enhlanzeni	1,311 (36.6%)
	Gert Sibande	690 (19.3%)
	Nkangala	287 (8.0%)
	City of Cape Town	654 (18.2%)
Total		3,584 (100.0%)
Level of education	Matric	1,861 (51.9%)
	Post Matric	580 (16.2%)
	Grade 12	1,109 (30.9%)
	Grade 11	34 (0.9%)
Total		3,584 (100.0%)

Source: Author's data compilation.

In terms of the district representation of the respondents, the table shows that, 85 (2.4%) respondents were from Alfred Nzo, 103 (2.9%) respondents were from Buffalo City, 333 (9.3%) respondents were from King Cetshwayo, 121 (3.4%) respondents were from Ugu, 36.6% [n=1,311] of the respondents were from Enhlanzeni, 19.3% [690] of the respondents were from Gert Sibande, 287 (8.0%) of the respondents were from Nkangala, and 654 (18.2%) were from the City of Cape Town. Finally, the Table 2 illustrates that (51.9%, 1,861 respondents) held matric certificates, 580 (16.2%) a Post

Matric, and 1,109 (30.9%) respondents were in Grade 12. Furthermore, 34 (0.9%) of the respondents were in Grade 11.

Respondents' Understanding of an Entrepreneur

The study assessed whether or not AGYWs' entrepreneurial knowledge improved after an intervention [Longitudinal Analysis]. The survey posed the questions on entrepreneurial mindset skills and knowledge frequently cited in the reviewed literature and the respondents were asked to express their views on who they thought an entrepreneur was using multiple choices questions. The response from the respondents is summarised in Table 3.

Table 3. Respondents' views on What Entrepreneur is All About

No	What an Entrepreneur is all about	Pre-training Survey	Post-training Survey
		results	results
		Frequency	Frequency
1	Someone who studied business management to start the business	1,747 (48.7%)	9 (0.3%)
2	Someone who sees the gap in the market and then start new business to meet those identified needs	1,837 (51.3%)	3,574 (99.7%)
3	Someone who offers goods and services to poor people in the community	0 (0.0%)	1 (0.0%)
Total		3,584 (100.0%)	3,584 (100.0%)

Source: Author's data compilation.

The ideal answer was [2], which characterises an entrepreneur as someone who sees the gap in the market and then start new business to meet those identified needs. However, the descriptive results from pre-training survey showed that 1,747 (48.7%) respondents were poorly entrepreneurially knowledgeable, while 1,837 (51.3%) respondents were highly entrepreneurially knowledgeable.

The findings from post training survey indicate that the AGYWs who were not entrepreneurially knowledgeable during pre-training significantly decreased from 1,747 (48.7%) to 9 (0.3%). Interestingly, the AGYWs who were entrepreneurially knowledgeable during pre-training significantly increased from 1,837 (51.3%) to 3,574 (99.7%). This shows that the knowledge of the participants about entrepreneurship improved, complemented by their training. The overall descriptive and longitudinal analysis conducted on who an entrepreneur was showed that the average pre-test score was 51.3% compared to the 99.3% post-test score and the variant of 48.4% shows that AGYWs substantially improved their entrepreneurial knowledge after training. Based on this finding, it can be inferred that the entrepreneurial mindset skills training significantly improved the knowledge of the AGYWs about an entrepreneur characteristic.

Pre- and Post-tests Results on whether Successful Entrepreneurs need a Formal Training at a Business School

The respondents were asked to indicate whether they thought entrepreneurs needed a formal training at a business school. The results are presented in Table 4.

Table 4. Respondents' views on Successful Entrepreneurs need a Formal Training at a Business Schools to Start and Run a Business

No	Successful Entrepreneurs need a Formal Training at a Business School like WITS to Start and Run a Business	Pre-training	Post-training
		Survey results	Survey results
		Frequency	Frequency
1	TRUE	2,050 (57.2%)	2 (0.7%)
2	FALSE	1,534 (42.8%)	3,558 (99.3%)
Total		3,584 (100.0%)	3,584 (100.0%)

Source: Author's data compilation.

Table 4 illustrates the pre- and post-tests results on whether successful entrepreneurs need a formal training at a business school to start and run a business. The ideal answer was false. The descriptive results from the pre-training survey showed that 2,050 (57.2%) respondents had poor entrepreneurial knowledge, while 1,534 (42.8%) respondents had a high entrepreneurial knowledge. The findings from post training survey indicate that the score of AGYWs who were not entrepreneurially knowledgeable during pre-training significantly decreased from 2,050 (57.2%) to 26 (0.7%). The overall descriptive and longitudinal analysis conducted on whether successful entrepreneurs needed a formal training at a business school to start and run a business found that the average pre-test score was 42.8% compared to the 99.3% post-test score and the significant positive variant of 56.5% shows that AGYWs substantially improved their entrepreneurial knowledge after training. It can thus be concluded that the training intervention improved the respondents' knowledge about entrepreneurship and addressed one of the challenges of who should become an entrepreneur.

Table 5. Respondents' views on the Role of Product or Service Marketing

No	Product or Service Marketing is the Means by which a Product or Service is made Known and Sold to Customers	Pre-training	Post-training
		Survey results	Survey results
		Frequency	Frequency
1	TRUE	2,435 (67.9%)	3,580 (99.9%)
2	FALSE	1,149 (32.1%)	4 (0.1%)
Total		3,584 (100.0%)	3,584 (100.0%)

Source: Author's data compilation.

Table 5 presents the results on the knowledge of the AGYWs on whether product or service marketing can help to promote and sell products and service is made known and sold to customers. The ideal answer was true. The descriptive results from the pre-training survey showed that 2,435 (67.9%) respondents had a high entrepreneurial knowledge, while 1,149 (32.1%) respondents were highly entrepreneurially knowledgeable. The findings from post training survey indicate that the score of AGYWs who were not entrepreneurially knowledgeable during pre-training significantly decreased from 32.1%, to 0.1%. The overall longitudinal analysis found that the average pre-test score was 67.9% compared to the 99.9% post-test score and the significant positive variant of 39.0% shows that the knowledge of the AGYWs improved after training. It can therefore be inferred that the entrepreneurship training is effective in improving the entrepreneurial mindset skills and knowledge such as the use of product or service marketing to promote and sell product or service to customers.

Table 6. Respondents' views on whether all Successful Entrepreneurs come from Rich Families and Background and are Well-connected

No	All successful entrepreneurs originally come from rich families and background and are well connected	Pre-training Survey results	Post-training Survey results
		Frequency	Frequency
1	TRUE	1,471 (41.0%)	3 (0.1%)
2	FALSE	2,113 (59.0%)	3,581 (99.9%)
Total		3,584 (100.0%)	3,584 (100.0%)

Source: Author's data compilation.

The study's objective was to assess how entrepreneurial mindset and skills training has driven the development and growth of AGYW's mindsets towards entrepreneurship. Pre- and post-tests captured respondents' views on whether all successful entrepreneurs originally come from rich families and background and their connections. The ideal answer was False.

The descriptive results from pre-training survey showed that 2,113 (59.0%) respondents were highly entrepreneurially knowledgeable, while 1,471 (41.0%) respondents were poorly entrepreneurially knowledgeable. The findings from post training survey indicate that the AGYW's who were not entrepreneurially knowledgeable during pre-training decreased from 41.0%, to 0.1%. The overall longitudinal analysis conducted on this research question found that the average pre-test score was 59.0% compared to the 99.9% post-test score and the significant positive variant of 40.9% shows that AGYW's greatly improved their entrepreneurial knowledge after training. It can thus be inferred that entrepreneurship training contributes towards improving the respondents' mindset, skills and knowledge about the real background of an entrepreneur.

Table 7. Respondents' views on the Role of Positive Mindset and Good Habits in Business Success

No	Positive Mindset and Good Habits can help AGYW's Succeed in their business	Pre-training Survey results	Post-training Survey results
		Frequency	Frequency
1	TRUE	1,947 (54.3%)	3,584 (100.0%)
2	FALSE	1,637 (45.7%)	
Total		3,584 (100.0%)	3,584 (100.0%)

Source: Author's data compilation.

Pre- and post-tests captured respondents' views on whether a positive mindset and good habits (like hard-working) can help them succeed in their business. The ideal answer was True. The descriptive results from pre-training survey showed that 1,947 (54.3%) respondents were highly entrepreneurially knowledgeable, while 1,637 (45.7%) respondents were poorly entrepreneurially knowledgeable. The findings from post training survey further indicate that the score of AGYW's who were not entrepreneurially knowledgeable during pre-training declined from 45.7% to 0.0%. Furthermore, the overall descriptive and longitudinal analysis conducted on this research question found that the average pre-test score was 54.3% compared to the 100.0% post-test score and the significant positive variant of 45.7% shows that the AGYW's substantially improved their entrepreneurial knowledge after training. Therefore, it can

be concluded that the training intervention improves the AGYWS' entrepreneurial mindset skills and knowledge which contributes towards the success of their future business plans.

Table 8. Respondents' views on the Concept of Product Positioning

No	Product Positioning	Pre-training Survey results	Post-training Survey results
		Frequency	Frequency
1	Strategies for making maximum sells of my business	1,195 (33.3%)	3,569 (99.6%)
2	The place where my business is located	1,287 (35.9%)	14 (0.4%)
3	All of the above	1,102 (30.7%)	1 (0.0%)
Total		3,584 (100.0%)	3,584 (100.0%)

Source: Author's data compilation.

The study further assessed how entrepreneurial mindset and skills training have driven the development and growth of AGYWs mindsets towards entrepreneurship. The descriptive results from pre-training survey showed that 1,195 (33.3%) respondents were highly entrepreneurially knowledgeable, while 2,389 (66.7%) respondents were poorly entrepreneurially knowledgeable on this subject. The findings from the post training survey indicate that the AGYWs who were not entrepreneurially knowledgeable during pre-training significantly declined from 66.7%, to 0.4%. The overall longitudinal analysis conducted on this research found that the average pre-test score was 33.3%, compared to the 99.6% post-test score and the significant positive variant of 66.3% shows that AGYWs improved their entrepreneurial knowledge after training. This implies that the training intervention improves the AGYWs' entrepreneurial competencies which is critical for AGYWs to start entrepreneurial ventures.

Table 9. Respondents' views on the Sue of Online and Social Media to Sell Products/Services

No	Possibility to Sell Products/Services of the Business through Company's Website, Facebook, Instagram, and WhatsApp	Pre-training Survey results	Post-training Survey results
		Frequency	Frequency
1	TRUE	2592(72.3%)	3580 (99.9%)
2	FALSE	992(27.7%)	4 (.1%)
Total		3584(100.0%)	3584(100.0%)

Table 9 shows the pre- and post-tests results of the respondents' views on the use of website, Facebook, Instagram, and WhatsApp to sell products and services. The ideal answer was "True". The descriptive results from pre-training survey showed that 2,592 (72.3%) respondents were entrepreneurially knowledgeable, while 992 (27.7%) respondents were poorly entrepreneurially knowledgeable. The findings from the post training survey further indicate that the AGYWs who were not entrepreneurially knowledgeable during pre-training significantly declined from 27.7% to 0.1%. Furthermore, the overall descriptive and longitudinal analysis conducted on this research question found that the average pre-test score was 72.3% compared to the 99.9% post-test score and the significant positive variant of 27.6% shows that the AGYWs marginally improved their entrepreneurial knowledge after the training. This suggests that the training intervention

contributes towards improving the entrepreneurial mindset skills and knowledge of the respondents about the possibility to sell products/services of the business through company's website, Facebook, Instagram, and WhatsApp.

Table 10. Respondents' views on Whether Performing a Good Micro-value Analysis in their Local Community can lead them to get an Entry Level Paid-job or Business Opportunity

No	Performing a Good Micro-value Analysis in their Local Community can lead them to get an Entry Level Paid-job or Business Opportunity	Pre-training	Post-training
		Survey results	Survey results
		Frequency	Frequency
1	TRUE	3,583 (100.0%)	3,580 (99.9%)
2	FALSE	1 (0.0%)	4 (0.1%)
Total		3,584 (100.0%)	3,584 (100.0%)

Table 10 illustrates the pre- and post-tests results of the respondents' views on whether performing a good micro-value analysis in their local community can lead them to get an entry level paid job or business opportunity. The ideal answer for this particular question was "True". The descriptive results from pre-training survey showed that 3,583 (100.0%) respondents were highly entrepreneurially knowledgeable, while only 1 (.0%) respondent was poorly entrepreneurially knowledgeable. However, the findings from the post training survey further indicate that the AGYWs who were not entrepreneurially knowledgeable during pre-training slightly increased from .0% to 0.1%. Furthermore, the overall descriptive and longitudinal analysis conducted on this research question further found that the average pre-test score was 100.0% compared to the 99.9% post-test score and the insignificant negative variance of 0.1% shows that the AGYWs did not improve their entrepreneurial knowledge after training. There was therefore no statistical significance in the score between the two tests. This suggests that there is a need of sequenced entrepreneurship training among AGYWs that can contribute towards improving and understanding that performing a good micro-value analysis in their local community can lead them to get an entry level paid job or business opportunity.

a. Correlation Analysis

Table 11. Correlations Matrix of Dependent and Independent Variables

Positive Mindsets	1.000								
Product Positioning	.043	1.000							
Entrepreneur's Family Background	.027	-.043	.000	1.000					
Marketing	-.152	.044	.000	.040	1.000				
Entrepreneurship	-.207	-.020	.001	.001	-.070	1.000			
Educational Background	.248	-.008	-.001	.017	-.122	-.031	1.000		
Online Business	-.088	-.159	-.003	-.202	-.197	-.009	-.082	1.000	
Micro-Value Chain Analysis	.113	-.594	.000	-.005	.266	-.262	.112	.026	1.000

**p<0.05 statistically significant at 5% level.

The relationships between all the entrepreneurial knowledge variables were estimated using a Pearson correlation. The results presented in Table 11 show that all the independent variables of the study correlate between 1.000 and 0.113. The Table 11 above showed a positive correlation coefficient (.113) between positive mindsets and entrepreneurial knowledge and skills among adolescent girls and young women during the period of investigation. The positive coefficient between positive mindsets and entrepreneurial knowledge of the trained AGYWs is an indication that entrepreneurship training is associated with increase in entrepreneurial knowledge improvement among AGYWs who participated in the entrepreneurship training intervention.

Table 11 further reveals a negative correlation coefficient (-.594) between product positioning and entrepreneurial knowledge and skills among adolescent girls and young women during the period of investigation. The negative coefficient between product positioning and entrepreneurial knowledge and skills of the trained AGYWs is an indication that entrepreneurship training is not associated with increase in entrepreneurial knowledge improvement in terms of product positioning among AGYWs participated in the entrepreneurship training intervention.

Table 11 further revealed an insignificant correlation coefficient (.000) between the rate of business failure and and entrepreneurial knowledge and skills among adolescent girls and young women during the period of investigation. The insignificant coefficient between the rate of business failure and entrepreneurial knowledge and skills of the trained AGYWs is an indication that entrepreneurship training is not associated with increase in entrepreneurial knowledge improvement among AGYWs participated in the entrepreneurship training intervention.

The Table 11 above further indicates negative correlation (-.005) between entrepreneur's family background and entrepreneurial knowledge and skills among adolescent and young. The negative correlation between entrepreneurs's family and educational background is an indication that entrepreneurship training is not associated with increase in entrepreneurial knowledge improvement among the AGYWs.

Furthermore, the Table 11 showed positive correlation (.266) between marketing and entrepreneurial knowledge and skills among adolescent and young women during the of investigation. The positive correlation between marketing and and entrepreneurial knowledge and skills is an indication that entrepreneurship training is associated with increase in entrepreneurial knowledge improvement among the AGYWs.

The Table 11 revealed negative correlation (-.262) between understating what entrepreneur is all about and entrepreneurial knowledge and skills among adolescent and young women during the of investigation. The negative correlation between the understanding of concept entrepreneurial is an indication that entrepreneurship training is not associated with increase in entrepreneurial knowledge improvement among AGYWs participated in the entrepreneurship training intervention.

The Table 11 revealed a positive correlation (.112) coefficient between educational background and entrepreneurial knowledge and skills among adolescent and young women during the of investigation. The positive correlation between educational background and entrepreneurial knowledge and skills is an indication that entrepreneurship training is associated with an increase in entrepreneurial knowledge improvement among AGYWs participated in the entrepreneurship training intervention.

The results further revealed a positive correlation (.026) between online business and entrepreneurial knowledge and skills among adolescent and young women during the of investigation. The positive correlation between online business and entrepreneurial knowledge and skills is an indication that entrepreneurship training is associated with increase in entrepreneurial knowledge improvement among AGYWs participated in the entrepreneurship training intervention.

The Table 11 revealed a positive (1.000) correlation coefficient between micro-value chain analysis and entrepreneurial knowledge and skills among adolescent and young women during the of investigation. The positive correlation is an indication that entrepreneurship training is associated with increase in entrepreneurial knowledge improvement among AGYWs participated in the entrepreneurship training intervention.

ANOVA

The analysis of variance is used test whether the entrepreneurial training intervention model is fit for predication. The results indicate the P-value is less than 0.05, indicating a statistical significance result. The result indicates that the hypothesis that the null hypothesis that the model is not fit for predication is rejected and the alternative hypothesis that the model is fit for prediction is accepted.

Table 12. ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.189	8	8.149	6.408	.000 ^b
	Residual	4545.747	3575	1.272		
	Total	4610.936	3583			

^aDependent Variable

^bPredictors: (Constant), Independent Variables

Source: Survey (2022), SPSS Version 27.

From the ANOVA statistics (Table 12), the study established the regression model had significance level of .000 which is an indication that data was ideal for drawing a valid conclusion on the population parameters. The finding confirms the objective of this article that assessed the role of entrepreneurial mindset skills and knowledge training as a tool for improving the entrepreneurial knowledge of adolescent girls and young women.

Table 13 in the next page showed the high Chi-square and p-values are greater than 0.05, indicating that there is no statistical significance between the dependent and independent variables listed in the Table 13 above. Since the P-value of .000 is less than 0.05 on the questionnaire items 1, 2, 3, 4, 5, 6, 8, and 9, we reject the null hypothesis and conclude that the AGYWs' actual entrepreneurial knowledge improved significantly.

Table 13 also highlights the comparison of the mean values between the pre-tests and post-tests surveys in the nine entrepreneurial knowledge and skills variables and characteristics that were identified. The results showed that there is statistically significant knowledge improvement after entrepreneurship training intervention took place for all factors since the mean scores after the completion of the training were greater than the means scores before the training intervention took place which indicates that the respondents had the higher rating or opinion on these variables of entrepreneurial knowledge and skills.

The analysis of the data revealed that the mean values after the entrepreneurial mindset training intervention are higher, which indicates that the respondents had a higher rating or opinion on entrepreneurial mindset knowledge and skills. This indicates that the entrepreneurial mindset training intervention motivated the AGYWs to be more entrepreneurially knowledgeable. It should also be noted that there were statistical differences between the before and after measurement regarding entrepreneurial knowledge improvement among adolescent girls and young women. This finding further revealed that the respondents' entrepreneurial mindset knowledge and skills improved significantly training intervention.

Table 13: The AGYWs Entrepreneurial Mindset Skills and Knowledge of Before and After Training

No	Questionnaire items	PRE-TESTS		POST TESTS		N	Chi-Square value	P-value
		Mean	Std. Deviation	Mean	Std. Deviation			
1	An entrepreneur	1.51	.500	2.00	.053	3,584	35.987	.000
2	Successful Entrepreneur need a formal training at a business school like Wits to start and run a business	1.43	.495	1.99	.085	3,584	122.024	.000
3	It is in a fact that (...%) of micro businesses that are started by entrepreneurs fail	1.73	.733	2.00	.017	3,584	18.069	.000
4	Product or service marketing is the means by which a product or service is known and sold to the customers	1.32	.467	1.56	.033	3,584	72.336	.000
5	A positive mindset and good habits will help me succeed in the business	1.46	.498	1.88	.000	3,584	61.502	.898
6	All Successful Entrepreneurs originally come from rich families and background and are well connected	1.59	.492	2.00	.029	3,584	54.237	.000
7	What is Product Positioning	1.97	.800	2.59	.071	3,584	53.107	1.000
8	I can sell my products or services of my business through my company website, Instagram, WhatsApp or we chat	1.28	.447	1.81	.033	3,584	72.336	.000
9	Performing Micro-Value chain analysis in my local community can lead me to get an entry level paid job or business opportunity	3.20	1.134	3.54	1.134	3,584	72.336	.000

**p<0.05 statistically significant at 5% level.

Source: Survey (2022), SPSS version 27.

Overall Discussion of Results

A total of 3,584 AGYWs was used in this article. All respondents in this study were females. Of the respondents, 25.7% were the ages 18 to 19 Years, 36.3% of the respondents were between the ages 20 to 25 Years; 20.6% of the respondents were between the ages 26 to 30; 16.6% were aged between 31 to 35, and only 0.9% were aged above 35 years. Thus, the majority of the respondents were between 20 and 25 years old. This is supported by Ulrich (1997) who stated that young girls and women are majority and the future of the countries and are seen as being newcomers to the entrepreneurship space and therefore do not have adequate entrepreneurial knowledge skills to initiate new or grow existing businesses ventures.

Based on the results in Table 2-12, it is valuable to note that there are statistical differences between the frequencies, means and standards deviations before and after training for the main variables identified and measured. This indicates that entrepreneurship mindset skills and knowledge training took place successfully and that AGYWs learned and gained entrepreneurial and business skills and knowledge after the training. Longitudinal analysis results showed that entrepreneurial mindset skills attaining are significantly useful in improving AGYWs knowledge entrepreneurially. This finding confirms that entrepreneurship training among AGYWs is effective in improving their entrepreneurial mindset, skills and knowledge.

These results support the literature that notes that South Africans are not educated for becoming entrepreneurs but for entering the labour market as employees, consumers of existing jobs instead of creators of new jobs (Smith-Hunter & Boyd, 2004; Valla, 2012). The results showed that there is statistically significant knowledge improvement after entrepreneurship training intervention took place for all factors since the mean scores after the completion of the training were greater than to the means scores before training intervention took place which indicates that the respondents had the higher rating or opinion on these variables of entrepreneurial knowledge and skills. The findings of the current study also support the current body of knowledge that found that entrepreneurial training or education has the potential to transfer and communicate to the young women the skills, ability and knowledge necessary to identify potential business opportunities (Amit & Muller, 1995). This is supported by Ulrich (1997) who stated that young girls are the majority and the future of the nation and are seen as being newcomers to the entrepreneurship space and therefore do not have adequate entrepreneurial knowledge to start and grow the businesses.

This finding also agrees with previous studies such as Smith-Hunter and Boyd (2004) who reported an overall lack of robust entrepreneurial elements in the education system in South Africa and lack of entrepreneurial mindset and skills among young women. From the results in the Table 13, since the P-value of .000 is less than 0.05 on the questionnaire items 1, 2, 3, 4, 6, 8, and 9, we reject the null hypothesis and conclude that the AGYWs' actual entrepreneurial knowledge improved significantly. However, for the questionnaire items 5 and 7 the null hypothesis is accepted and the alternative hypothesis is rejected since their P-value were greater than 0.05. This implies that entrepreneurial mindset skills and knowledge training significantly improved the entrepreneurial knowledge of the AGYWs in South Africa.

These findings are supported Gouvea et al. (2021) who found that an entrepreneur introduces a new or improved product or service, introduces a new production or

marketing method; opens up a new market; uses a new source of supply of raw materials or other components, and creates a new organization. The findings of the current study are in line with the current body of knowledge that states that women are keen to use sources of entrepreneurial training and business advice to act upon it and place a higher value on such advice (Wickham, 2006). The findings of the current study also support the current body of knowledge that found that the positive pull factors such as a career path that offers entrepreneurial opportunities or an education gives a person the adequate and appropriate knowledge and business opportunity while push factors encourage entrepreneurship for reasons such as traditional jobs being less attractive or option (Kirkwood, 2009).

Moreover, the findings of the current study support Mitchell (2020) finding that concluded that the establishment of entrepreneurial knowledge could potentially facilitate the promotion of flexibility, creativity, ongoing innovation and renewal and enhance value creation and job formation among the youth. The findings of the current study also support the findings of other studies that found that real correlations between the personality traits of the big five model such as extraversion, agreeableness, openness, conscientiousness and neuroticism and the success of entrepreneurial activities (Rucker & Galinsky, 2016). However, the findings of the current study contradict to Moses and Akinbode (2014), views that entrepreneurial as science that involves business and management functional skills which is teachable using a conventional pedagogical approach, and on other side entrepreneurial as art which relates to creative and innovative attitudes of entrepreneurship which is not easily teachable.

Based on the regression analysis results for the entrepreneurial mindset skills and knowledge variables, the study can therefore draw a valid conclusion on the crucial role of entrepreneurial mindset skills and knowledge training as a tool for improving knowledge of adolescent girls and young women entrepreneurially as the value of significance (P-value) was less than 5%. The findings of the current study show that the increased entrepreneurial knowledge variable is driven by the training conducted. The coefficients of Q1, Q2, Q3, Q4, Q6, Q7, Q8, and Q9 are positive and statistically significant at 5%. The coefficients on the entrepreneur, successful entrepreneur, product or service marketing, the rate on entrepreneurs fail, background of successful entrepreneurs, product positioning, e-business, and performing micro-value chain analysis were both significant and positive at a 5% level. We are 95% confident that the current entrepreneurial skills and knowledge leverage has a significant positive effect on the AGYWs measured by post-tests. The findings are statistically significant at the 1% confidence level for the AGYWS to the extent of 1.134. This implies that an increase in the training intervention is associated with an increase in their knowledge improvement entrepreneurially. These results are in line with the current body of knowledge that states that the willingness of women proprietors to acquire formal business and entrepreneurial skills training and to develop non-formal management skills such as networking and flexibility it is of huge benefit for women entrepreneurs (Johnson, 2009; Kirkwood, 2009; Mathisen & Arnulf, 2016). The results are in line with previous studies that demonstrated that the positive impact of entrepreneurial training beyond the training session (Friedrich, Glaub, Gramberg, & Frese, 2006; Ladzani & Van Vuuren, 2002; Lindh & Thorgren, 2021).

CONCLUSIONS AND RECOMMENDATIONS

This paper examined the entrepreneurial knowledge of adolescent girls and young women in South Africa. This study adopted quantitative and descriptive research approach through a longitudinal data collection and analysis. The findings of the study confirmed that entrepreneurial training intervention was highly effective in improving the entrepreneurially knowledge of potential AGYWs in four provinces in South Africa. This article offers entrepreneurship trainers and educators a real platform for the future development in the field of entrepreneurship. The appropriate Chi-square test was executed on the relevant variables and there was a significant improvement in the entrepreneurial knowledge of the AGYWs after the training. Furthermore, on the basis on descriptive statistics analysis the null hypotheses were rejected and the alternative hypotheses accepted and concluded that there is positive statistically significant relationship between entrepreneurship training and entrepreneurial knowledge improvement among adolescent and young women.

Overall the result showed that AGYWs expectations were met after the entrepreneurship training. This article has demonstrated that AGYWs gained new skills and knowledge to initiate new venture businesses. The relevancy of entrepreneurial training was examined and measured and proved at all levels of significant in improving entrepreneurial mindset skills and knowledge as introduced by Hohanadel and Finamore (2015). The Southern African government should target and equip AGYWs with entrepreneurial skills on how to become jobs creators rather than being job seekers. The study was only limited to AGYWs without comparing to their male counterparts, further research should also include young man to address the issue of gender gap. Quantitative research design was adopted and all limitations linked with this methodology apply to this research, future research could be conducted using a mixed method approach. Since the research was limited to only four provinces of South Africa, it is difficult to generalise the findings to the whole country; hence it is suggested that further research should be conducted in other provinces to compare the findings. Future research could consider how the findings could be used in other countries.

REFERENCES

- Adhikary, D., Rai, A., & Rajaratnam, B. (2016). Successful Women Entrepreneurs in South Africa. *Pretoria, Ntsika Enterprise Promotion Agency*.
- Ahwireng-Obeng, F. (2003). Youth Economic Empowerment in South Africa: Entrepreneurship versus Small Business Policy. Paper presented at the *Proceedings at the 48th Conference of the International Council for small business (ICBS)*, (pp. 9-11). <https://hdl.handle.net/10520/EJC-13752c8daa>
- Al Mamun, A., Fazal, S. A., & Muniady, R. (2019). Entrepreneurial Knowledge, Skills, Competencies and Performance: A Study of Micro-enterprises in Kelantan, Malaysia. *Asia Pacific Journal of Innovation and Entrepreneurship*, 13(1), 29-48. <http://dx.doi.org/10.1108/APJIE-11-2018-0067>
- Amit, R., & Muller, E. (1995). "Push" and "pull" Entrepreneurship. *Journal of Small Business & Entrepreneurship*, 12(4), 64-80. <https://doi.org/10.1080/08276331.1995.10600505>

- Anastasiou, A., Argiri, V., Komninos, D., Dermatis, Z., & Papageorgiou, C. (2021). The Role of Entrepreneurship in Changing the Employment Rate in the European Union. <https://orcid.org/0000-0003-4546-7846>
- Bellotti, F., Berta, R., De Gloria, A., Lavagnino, E., Antonaci, A., Dagnino, F., . . . Mayer, I. S. (2014). Serious Games and the Development of an Entrepreneurial Mindset in Higher Education Engineering Students. *Entertainment Computing*, 5(4), 357-366. <https://doi.org/10.1016/j.entcom.2014.07.003>
- Billingsley, J., Lipsey, N. P., Burnette, J. L., & Pollack, J. M. (2021). Growth Mindsets: Defining, Assessing, and Exploring Effects on Motivation for Entrepreneurs and Non-entrepreneurs. *Current Psychology*, 1-19. <https://doi.org/10.1007/s12144-021-02149>
- Bosman, L., & Fernhaber, S. (2018). Defining the Entrepreneurial Mindset. In *Teaching the Entrepreneurial Mindset to Engineers* (pp. 7-14): Springer. <http://thuvienso.bvu.edu.vn/handle/TVDHBRVT/17147>
- Botha, M., Nieman, G., & Van Vuuren, J. (2007). Measuring the Effectiveness of the Women Entrepreneurship Programme on Potential, Start-up and Established Women Entrepreneurs in South Africa. *South African Journal of Economic and Management Sciences*, 10(2), 163-183. <https://hdl.handle.net/10520/EJC21815>
- Chitiga, M., Henseler, M., Mabugu, R. E., & Maisonnave, H. (2021). How COVID-19 Pandemic Worsens the Economic Situation of Women in South Africa. *The European Journal of Development Research*, 1-18.
- Davis, M. H., Hall, J. A., & Mayer, P. S. (2016). Developing a New Measure of Entrepreneurial Mindset: Reliability, Validity, and Implications for Practitioners. *Consulting Psychology Journal: Practice and Research*, 68(1), 21. <https://psycnet.apa.org/doi/10.1037/cpb0000045>
- Dawson, H. J. (2021). 'Be your Own Boss': Entrepreneurial Dreams on the Urban Margins of South Africa. *Beyond the Wage: Ordinary Work in Diverse Economies*, 115. <https://doi.org/10.51952/9781529208948.ch005>
- Drucker, P. (2014). *Innovation and Entrepreneurship*: Routledge. <https://doi.org/10.4324/9781315747453>
- Faltin, G. (2020). The Successful Entrepreneurs Start as an Artist and Composer. *Berlin: German Industry and Commerce*.
- Friedrich, C., Glaub, M., Gramberg, K., & Frese, M. (2006). Does Training Improve the Business Performance of Small-scale Entrepreneurs? An Evaluative Study. *Industry and Higher Education*, 20(2), 75-84. <https://doi.org/10.5367/000000006777699847>
- Gódnány, Z., Machová, R., Mura, L., & Zsigmond, T. (2021). Entrepreneurship Motivation in the 21st Century in Terms of Pull and Push Factors. *TEM J. Technol. Educ. Manag. Inform*, 10, 334-342. <https://doi.org/10.18421/TEM101-42>
- Gouvea, R., Kapelianis, D., Montoya, M.-J. R., & Vora, G. (2021). The Creative Economy, Innovation and Entrepreneurship: An Empirical Examination. *Creative Industries Journal*, 14(1), 23-62. <https://doi.org/10.1080/17510694.2020.1744215>.
- Hay, M., Cox, L. W., Reynolds, P. D., Autio, E., & Bygrave, W. D. (2017). Global Entrepreneurship Monitor (gem)-2002 Executive Report. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.
- Hendricks, L. (2018). Organising and Mobilising South African Women Entrepreneurs'. *Pretoria, DTI*.

- Hochanadel, A., & Finamore, D. (2015). Fixed and Growth Mindset in Education and How Grit Helps Students Persist in the Face of Adversity. *Journal of International Education Research (JIER)*, 11(1), 47-50. <https://doi.org/10.19030/jier.v11i1.9099>
- Holcombe, R. G. (2021). Entrepreneurial Economies. *Economies*, 9(3), 123. <https://doi.org/10.3390/economies9030123>
- Huikari, S., & Korhonen, M. (2021). Unemployment, Global Economic Crises and Suicides: Evidence from 21 OECD Countries. *Applied Economics*, 53(13), 1540-1550. <https://doi.org/10.1080/00036846.2020.1838430>
- Ijeoma, E. O., & Ndedi, A. (2021). Addressing Unemployment Challenges among Young Graduates in South Africa: The Role of Entrepreneurship Education. In.
- Johnson, V. D. (2009). *Growth Mindset as a Predictor of Smoking Cessation*. Cleveland State University.
- Kanonuhwa, M., Rungani, E. C., & Chimucheka, T. (2018). The Association between Emotional Intelligence and Entrepreneurship as a Career Choice: A Study on University Students in South Africa. *SA Journal of Human Resource Management*, 16(1), 1-9. <https://hdl.handle.net/10520/EJC-e307fb505>
- Kirkwood, J. (2009). Motivational Factors in a Push-Pull Theory of Entrepreneurship. *Gender in Management*, 24(5), 346.
- Kirzner, I. M. (2015). *Competition and Entrepreneurship*. University of Chicago Press.
- Ladzani, W. M., & Van Vuuren, J. J. (2002). Entrepreneurship Training for Emerging SMEs in South Africa. *Journal of Small Business Management*, 40(2), 154-161. <https://doi.org/10.1111/1540-627X.00047>
- Le Roux, I. (2006). *Entrepreneurial Cognition and the Decision to Exploit a New Venture Creation Opportunity*. University of Pretoria. <http://hdl.handle.net/2263/28247>
- Leutner, F., Ahmetoglu, G., Akhtar, R., & Chamorro-Premuzic, T. (2014). The Relationship between the Entrepreneurial Personality and the Big Five Personality Traits. *Personality and Individual Differences*, 63, 58-63. <https://doi.org/10.1016/j.paid.2014.01.042>
- Mathisen, J. E., & Arnulf, J. K. (2013). Competing Mindsets in Entrepreneurship: The Cost of Doubt. *The International Journal of Management Education*, 11(3), 132-141.
- Mbonyane, B., & Ladzani, W. (2011). Factors that Hinder the Growth of Small Businesses in South African Townships. *European Business Review*, 23(6), 550-560.
- Meredith, G., & Barrett, P. (1995). Women Self-employed Entrepreneurs in Queensland: Significance and Policy Issues: First Report. *Lismore, Australia: Queensland Small Business Corporation*.
- Mitchell, G. R. (2007). Instill the Entrepreneurial Mindset. *Research-Technology Management*, 50(6), 11-13. <https://doi.org/10.1080/08956308.2007.11657467>
- Moses, C., & Akinbode, M. (2014). Entrepreneurship Curriculum and Pedagogical Challenges in Captivating Students' Interest towards entrepreneurship Education. *Research Journal of Economics and Business Studies*, 4(1).
- Mutarubukwa, P. (2015). The Role of Entrepreneurship in Combating Youth Unemployment and Social Crime in Tanzania. *Business Education Journal*, 1(1).
- Nafukho, F. M. (2018). Entrepreneurial Skills Development Programs for Unemployed Youth in Africa: A Second Look. *Journal of Small Business Management*, 36(1), 100.

- Neiman, G., Hough, H., & Neiuwenhuizen, C. (2003). Entrepreneurship: A South African Perspective. *Pretoria: Van Schaik. Entrepreneurship Theory and Practice*, 29(5), 577-597.
- O'Neill, R. C., & Viljoen, L. (2001). Support for Female Entrepreneurs in South Africa: Improvement or Decline? *Journal of Consumer Sciences*, 29, 37-44.
- Pfeifer, S., Šarlija, N., & Zekić Sušac, M. (2016). Shaping the Entrepreneurial Mindset: Entrepreneurial Intentions of Business Students in Croatia. *Journal of Small Business Management*, 54(1), 102-117.
- Pidduck, R. J., Clark, D. R., & Lumpkin, G. (2021). Entrepreneurial Mindset: Dispositional Beliefs, Opportunity Beliefs, and Entrepreneurial Behavior. *Journal of Small Business Management*, 1-35. <https://doi.org/10.1080/00472778.2021.1907582>
- Rucker, D. D., & Galinsky, A. D. (2016). Growing Beyond Growth: Why Multiple Mindsets Matter for Consumer Behavior. *Journal of Consumer Psychology*, 26(1), 161-164. <https://doi.org/10.1016/j.jcps.2015.06.009>
- Saxena, A. K. (2021). Innovation, Creativity, Entrepreneurship Management: An Analytical Approach. In *Handbook of Research on Future Opportunities for Technology Management Education* (pp. 313-330): IGI Global.
- Say, J.-B. (2015). *Revolutionary, Entrepreneur, Economist*: Routledge. <https://doi.org/10.1080/01916599.2014.989676>
- Schindehutte, M., Morris, M. H., & Kuratko, D. F. (2000). Triggering Events, Corporate Entrepreneurship and the Marketing Function. *Journal of Marketing Theory and Practice*, 8(2), 18-30. <https://doi.org/10.1080/10696679.2000.11501865>
- Schjoedt, L., & Shaver, K. G. (2017). Deciding on an Entrepreneurial Career: A Test of the Pull and Push Hypotheses using the Panel Study of Entrepreneurial Dynamics Data. *Entrepreneurship Theory and Practice*, 31(5), 733-752. <https://doi.org/10.1111/j.1540-6520.2007.00197.x>
- Schumpeter, S. (1954). *History of Economic Thought*. London, George.
- Smith-Hunter, A. E., & Boyd, R. L. (2004). Applying Theories of Entrepreneurship to a Comparative Analysis of White and Minority Women Business Owners. *Women in Management Review*, 19(1), 18-28.
- Soriano, D. R., & Huarng, K.-H. (2013). Innovation and Entrepreneurship in Knowledge Industries. *Journal of Business Research*, 66(10), 1964-1969. <https://doi.org/10.1016/j.jbusres.2013.02.019>
- Story, J. S., & Barbuto Jr, J. E. (2019). Global Mindset: A Construct Clarification and Framework. *Journal of Leadership & Organizational Studies*, 18(3), 377-384. <https://doi.org/10.1177/1548051811404421>
- Ulrich, T. A. (1997). *An Empirical Approach to Entrepreneurial-learning Styles*. Paper presented at the Internationalising Entrepreneurship Education and Training Conference, IneEnt97, California.
- Valla, S. (2012). *Barriers Facing Female Entrepreneurs: A Study in the Gauteng Province, South Africa*: University of Johannesburg (South Africa).
- Wickham, P. (2006). *Strategic Entrepreneurship: A Decision-making Approach to New Venture Creation and Management*. London, UK: Financial Times, Pitman Publishing.
- Zhao, H., & Seibert, S. E. (2006). The Big Five Personality Dimensions and Entrepreneurial Status: A Meta-analytical Review. *Journal of Applied Psychology*, 91(2), 259-271. <https://psycnet.apa.org/doi/10.1037/0021-9010.91.2.259>