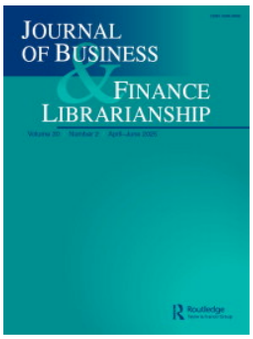

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Bridging the financial literacy gender gap in Uganda: Insights for educators and Librarians

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ABSTRACT

This study examines gender disparities in financial literacy among students in Business, Technical, and Vocational Education and Training (BTVET) institutions in Uganda. Data was collected through structured questionnaires from 400 BTVET students in the central region of Uganda, selected via stratified random sampling. The study's objectives are to evaluate financial literacy levels by gender and identify factors influencing these levels. Analytical methods include descriptive statistics, *t*-tests, and Ordinary Least Squares (OLS) regression. Results indicate that male students generally have higher financial literacy levels than female students. Specifically, male students significantly outperform female students in technical fields, while female students show greater financial literacy in education fields compared to their male counterparts. The study identifies age and financial confidence as key determinants of financial literacy for both genders. Additionally, while parents' education plays a significant role in enhancing financial literacy among male students, female students' financial literacy is more influenced by their financial management skills and parental discussions on savings and spending. The study highlights the need for targeted initiatives to promote gender equality in technical education. Such initiatives could include mentorship programs, scholarships, library partnerships, and awareness campaigns aimed at encouraging female students to pursue technical fields and providing them with the necessary support to excel. These measures are essential for closing the financial literacy gender gap among BTVET students in Uganda.

KEYWORDS

BTVET; education; financial literacy; gender; library; Uganda

1. Introduction

Business, Technical, and Vocational Education and Training (BTVET) is a crucial element of the education system in Sub-Saharan Africa, designed to equip students with the practical skills and knowledge necessary for employment across various sectors. BTVET programs cover a broad spectrum of disciplines, including business management, engineering,

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agriculture, healthcare, and hospitality. Unlike traditional academic pathways, BTVET emphasizes hands-on training, experiential learning, and the acquisition of industry-relevant skills, effectively preparing students for the workforce (Pilz, 2017).

While significant attention has been paid to the employability and career prospects of BTVET graduates (Tukundane et al., 2015), the importance of financial literacy among BTVET students remains underrecognized. Financial literacy, which includes understanding and effectively applying financial concepts in budgeting, saving, investing, borrowing, and debt management, is essential for students poised to enter the workforce or start their own businesses (Lusardi & Mitchell, 2014). BTVET plays a pivotal role in providing students with practical skills that enhance employability and contribute to economic development (McGrath, 2012; OECD, 2023; Tukundane et al., 2015). Additionally, BTVET guidance services in educational institutions are vital in helping students acquire life skills essential beyond school (Okumu & Bbaale, 2019; Tukundane et al., 2015). Addressing financial literacy among BTVET students can therefore equip them with crucial financial management skills early on, paving the way for financial well-being and resilience in their future endeavors (Klapper & Lusardi, 2020).

Libraries, as accessible community hubs, could play a significant role in supporting financial literacy initiatives in Uganda, particularly in reducing the gender gap in financial knowledge. Libraries can serve as centers for financial education by providing resources, hosting workshops, and facilitating partnerships with community organizations, all of which could help BTVET students, and the wider community gain financial literacy skills. Librarians could further support this mission by engaging in outreach programs designed to make financial information accessible to groups with limited resources, thereby fostering inclusive growth (Kiszl & Winkler, 2022)

Despite advancements in gender equality in areas like labor participation and formal education attainment (Blossfeld et al., 2023; Evans et al., 2021; World Economic Forum, 2023), a persistent gender gap in financial literacy continues to be observed globally, with women generally exhibiting lower financial literacy levels than men (OECD, 2020). This disparity exists across countries with varying financial market developments, institutional setups, and social and cultural contexts (Hasler & Lusardi, 2017), and spans various demographic and socioeconomic groups, including teenagers (Bottazzi & Lusardi, 2021; Driva et al., 2016), university students (Jayaraman & Jambunathan, 2018), and employees (Yu et al., 2015). While some studies, such as Preston and Wright (2019), indicate that the gender gap in financial literacy is more pronounced in developed countries, there is limited research on this topic in developing nations, particularly in Sub-Saharan Africa.

Although evidence on financial literacy has been documented among students in various levels of formal education (Barboza et al., 2018; Ergün, 2018; Lantara & Kartini, 2016;; Somidinova et al., 2017; Yao et al., 2023), more studies are needed, especially among BTVET students. This study is designed to assess gender differences in financial literacy levels among BTVET students in Uganda. The BTVET program is an integral part of Uganda's education system, focusing on providing hands-on training and experiential learning critical for employment in various sectors (BTVET ACT, 2008). Despite the program's importance, there is a noticeable lack of research on financial literacy within this demographic, particularly concerning gender differences. Addressing this gap is crucial, as financial literacy forms the foundation for economic empowerment.

The significance of this study is further underscored by Uganda's commitment to improving financial literacy, which is viewed as a fundamental component of economic growth and inclusion (Bank of Uganda, 2013). In line with this commitment, the Bank of Uganda launched a comprehensive Financial Literacy Strategy aimed at empowering Ugandans with the knowledge and skills necessary for sound financial management. This strategy highlights the importance of financial literacy in making informed financial choices, especially for BTVET students preparing to enter diverse economic sectors (BTVET ACT, 2008; Bank of Uganda, 2013). By examining gender differences in financial literacy among BTVET students, this study aligns with national goals to enhance financial capabilities, particularly among women and youth identified as priority groups (Bank of Uganda, 2023).

This study aims to assess the financial literacy levels of BTVET students in Uganda by gender and identify the factors influencing financial literacy among these students. The paper is structured as follows: Section 2 presents the materials and methods, Section 3 shows the results and discussion, Section 4 provides conclusions, and Section 5 outlines implications for policy and practice.

2. Materials and methods

2.1. Study design

The study respondents were selected using a stratified sampling method to ensure a representative cross-section of students from Business, Technical, Vocational Education, and Training (BTVET) institutions in the central region of Uganda. A sample size of 400 participants was set for the study using the Yamane (1967) formula for sample size determination, expressed as:

$$\eta = \frac{N}{1 + N\varepsilon^2} \tag{1}$$

Where η denotes the sample size, N denotes the population size, and ε represents the margin of error. To ensure the study data's validity and reliability, this calculation was based on a 95% confidence level and a 5% margin of error. A total of 50 BTVET institutions were randomly selected across the central region of Uganda, stratified by a ratio of 3:2 for public to private institutions. Next, 8 participants were selected from each of the 30 public and 20 private BTVET schools to make a total of 400 respondents used in the study.

2.2. Data collection

The data was collected between 3rd and 24th of December 2023. Prior to conducting interviews, informed consent was obtained from all participants. The study utilized a semi-structured questionnaire to collect data on the BTVET students' financial literacy, as well as other relevant factors, including their socio-demographic characteristics as detailed in Section 2.3.

2.3. Variables description and measurements

2.3.1. Dependent variable: financial literacy scores

The study used financial literacy scores as the dependent variable to measure BTVET students' financial literacy. To obtain these scores, a comprehensive survey questionnaire was designed, consisting of 20 questions that evaluated the students' understanding of various finance concepts such as investment, savings, interest rate, loan repayment, inflation, time value of money, insurance, money illusions, financial institutions, profit sales, knowledge about money, and cash flow process among others. For a more detailed view of the questions, please refer to Supplementary Materials.

To ensure an equitable and unbiased scoring system, each financial literacy question in the survey was given a weightage of 1 point. This resulted in a maximum achievable score of 20 points. The financial literacy of each student was then evaluated based on the number of correct answers they provided. Mathematically, the financial literacy score of BTVET student "i" can be calculated as:

$$\mathrm{F}_i = \sum_{j=1}^{n=20} Q_{ij} \tag{2}$$

Where F_i is the financial literacy score for student "i," n denotes the total number of financial literacy questions, and Q_{ij} represents the response

to question "*j*" by student "*i*" such that Q_{ij} is set to "1" if the response is correct and "0" if the response is incorrect.

2.3.2. Independent variables of the study

As the study focuses on gender differences, the primary independent variable is the *gender* of the BTVET students, measured as a binary variable and coded as "1" if the respondent is a female student and "0" if it is a male student.

In this study, the terms "male" and "female" refer to the participants' self-reported gender, aligning with binary categories for simplicity in analysis. However, we acknowledge that gender identity is more diverse and not limited to a binary framework, which may be an area for future research (Ainsworth, 2015).

The *age of students, training years, and work experience* were also used in the study and measured quantitatively. In BTVET, students are trained either for a one-year certificate program or a two-year diploma program. *The work experience* of the students was measured by adding up all the years they worked before they began the BTVET program to the time the study was done.

Including a variable such as *parents' education* is crucial to capture family background information. *Parents' education* was a binary variable, indicating whether or not at least one parent or guardian holds no college or a college education. We used three variables—*financial management score, financial confidence index, and loan access and usage*—to measure the students' financial behaviors. The financial management score was a proxy for students' financial management abilities. It was obtained from 11 binary questions assessing their ability to plan finances proactively and make prudent financial decisions. A positive response was assigned 1 point, while a negative response received zero points, resulting in a maximum obtainable score of 11 for each student. We adopted a composite measure for *financial confidence index*. This measure entailed 11 Likert questions probing whether students felt confident in planning or monitoring their finances, executing financial transactions, utilizing digital financial tools, engaging in business activities involving cash exchange, and performing certain manual and digital bank transactions. Respondents rated their confidence levels on a 4-point scale ranging from "not at all confident" to "very confident," with corresponding point allocations of 1–4. This resulted in a composite score ranging from 11 to 44, reflecting the students' confidence level based on their responses. We also adopted a binary measure to ascertain whether students accessed and utilized loans to finance their educational expenses.

Five binary variables were used to measure parents' financial socialization. These variables included whether parents discussed *savings decisions,*

spending decisions, budgeting, general money matters, and financial news with their children. Students indicated their agreement or disagreement with each question by selecting either "Yes" (coded as 1) or "No" (coded as 0) to reflect their engagement in these discussions.

Furthermore, we included the *students' field of study,* these fields of study were grouped into five major categories: business (coded as 1), Vocational (coded as 2), Technical (coded as 3), Education (coded as 4), and Others (coded as 5). We further employed a binary variable to ascertain whether students had taken any *financial education courses in school or not*.

2.4. Data analysis

Descriptive statistics, including measures of frequency, percentage, and mean, were used to summarize the data. Inferential statistics, such as t-test, and Ordinary least square regression were employed to test hypotheses, estimate parameters, and explore structural differences in the study data.

2.5. Influence of gender on study characteristics

Descriptive and inferential statistical methods were employed to examine the potential influence of gender on the study characteristics. We used descriptive statistics such as means and percentages to summarize the characteristics of each gender. Subsequently, the independent sample t-test was conducted to compare the means of male and female students to ascertain whether gender differences had a statistically significant effect on the characteristics under study. Two hypotheses were tested in the *t*-test. The null hypothesis (H_0) is defined as "there is no significant difference in the study in the means of study characteristics between male and female students," while the alternative hypothesis (H_1) is defined as "there is a significant difference in the means of study characteristics between male and female students." We set a maximum significance level at $\alpha = 0.05$. The decision rule is that if the p-value obtained from the *t*-test is less than the set significance level, the null hypothesis is rejected, indicating that gender may influence the study characteristics.

2.6. Determining financial literacy levels

The first objective of this study is to determine the financial literacy levels among BTVET students by gender. This classification process involved grouping the students into three distinct financial literacy levels—high, moderate, and low. The grouping was based on the scores obtained by answering twenty financial literacy questions designed to assess their financial knowledge (see Supplementary Materials).

First, we calculated the mean and standard deviation (SD) of the scores achieved by the students. The classification criteria were as follows:

1. Students whose scores exceeded one SD above the mean were classified as having a "high financial literacy level."
2. Students with scores within one SD above or below the mean were classified as having a "moderate financial literacy level" as their scores were close to average.
3. Students with scores more than one SD below the mean were classified as having a "low financial literacy level," indicating that their scores deviated considerably below the average.

Descriptive statistics were then used to report the outcome of the classification according to the gender of the students. This approach aimed to provide a comprehensive understanding of the financial literacy levels among BTVET students while accounting for potential gender differences.

2.7. Determinants of financial literacy

We employed the Ordinary Least Squares (OLS) regression model to examine factors influencing financial literacy among BTVET students. Specifically, we conducted a multilevel OLS analysis to investigate the effect of gender on students' financial literacy while controlling for other predictor variables. In the multilevel analysis, we first estimated separate OLS regression models for male and female students as follows:

$$\mathrm{Y}_{im} = \beta_m X_{im} + \varepsilon_{im} \tag{3}$$

$$\mathrm{Y}_{if} = \beta_f X_{if} + \varepsilon_{if} \tag{4}$$

Given that Equation (3) and (4) depict the OLS model for male and female students, Y_{im} and Y_{if} represent the financial literacy scores of male and female students, respectively. X_{im} and X_{if} denote the predictor variables, ε_{im} and ε_{if} denote the error terms for male and female students, respectively.

After estimating separate OLS regression models for male and female students, we proceeded to obtain OLS estimates for all the students in the sample, including the gender variable along with other predictor variables. The overall OLS regression model is given as:

$$\mathrm{Y}_i = \beta_g G_i + \beta X_i + \varepsilon_i \tag{5}$$

Where Y_i denotes the financial literacy scores of students in the whole sample, G_i is the gender variable, which is coded as 0 for male students and 1 for female students, X_i represents the predictor variables, β represents the regression coefficient, and ε_i indicates the error term.

2.8. Ethical considerations

The TASO Research and Ethics Committee provided ethical review and approval for this study (approval number: TASO-2022-147). Participating in the study was entirely voluntary, and we obtained both verbal and written consent from women who were assured of complete confidentiality.

3. Results and discussions

3.1. Influence of gender on study characteristics

According to Table 1, the average financial literacy score for the entire sample is 11.23. The average score for males is 11.88, while for females, it is 10.95. This indicates that, on average, males score higher than females in financial literacy. The difference in average financial literacy scores between males and females is 0.95 (11.88 – 10.95). This means that, on average, males score 0.95 points higher than females on the financial literacy test. The gap of 0.95 is statistically significant ($p < 0.05$), indicating that the difference in scores is unlikely to be due to random chance. This suggests that there is a real and meaningful disparity in financial literacy between male and female students. The significant gap indicates that male students tend to have a higher level of financial literacy compared to female students. This could be due to various factors, such as differences in educational opportunities, socialization patterns, access to financial resources, gender roles, social and cultural influences or previous exposure to financial education as discussed in (Bottazzi & Lusardi, 2021; Chen & Volpe, 2002; Dewi, 2022; Ergün, 2018; Hasler & Lusardi, 2017).

The mean age of male students is 22.92, while 21.98 for female students. The distribution of students in the sample is predominantly female (67.75%) compared to male (32.25%). The male students have an average of 0.2 years of work experience than the female students ($p < 0.01$). This suggests that male students may have more opportunities for work or may be more likely to engage in work during their studies and nature of their lifestyle. This additional work experience could contribute to the observed gap in the financial literacy score, as experiential learning can enhance financial knowledge and decision-making skills (Al-Bahrani et al., 2020).

Table 1. Summary of variables used in the study.

	(1)	(2)	(3)	(2–3)
Variables	WS $N=400$	Male $n=129$	Female $n=271$	gap
Dependent variable				
Financial literacy score	11.23	11.88	10.93	0.95**
Independent variables				
Gender (%)				
Male	32.25			
Female	67.75			
Age	22.29	22.92	21.98	0.94
Training years	1.36	1.41	1.34	0.07
Work experience	1.17	1.27	1.07	0.2***
Parents education (%)				
No college education	42.25	40.31	43.17	−2.86
College education or higher	57.75	59.69	56.83	2.86
Financial behavior				
Financial management score	7.23	7.24	7.22	0.02**
Financial confidence index	28.86	28.96	28.81	0.15
Loan access and usage (%)				
Yes	80.75	87.60	77.49	10.11
No	19.25	12.40	22.51	−10.11
Parents financial socialization				
Parents discuss savings decisions (%)				
Yes	78.50	73.64	80.81	±7.17
No	21.50	26.36	19.19	
Parents discuss spending decisions (%)				
Yes	78.50	75.19	80.07	±4.88
No	21.50	24.81	19.93	
Parents have conversations about budgeting (%)				
Yes	73.00	74.42	72.32	±2.10
No	27.00	25.58	27.68	
Parents discuss money matters (%)				
Yes	85.25	82.17	86.72	±4.55
No	14.75	17.83	13.28	
Parents have conversations about financial news (%)				
Yes	74.75	75.97	74.17	±1.80
No	25.25	24.03	25.83	
Major field of study (%)				
Business	29.25	24.03	31.73	−7.70
Vocational	28.50	24.81	30.26	−5.45
Technical	20.75	42.64	10.33	32.1***
Education	17.25	2.33	24.35	−22.02***
Others	4.25	6.20	3.32	2.88
Financial education courses in school (%)				±10.32**
Yes	62	68.99	58.67	10.32
No	38	31.01	41.33	−10.32

Note: WS: whole sample; **, *** indicate significance at 5 and 1%, respectively.

Also, results found that the overall financial management score was 7.23, with males scoring slightly higher at 7.24 and females at 7.22. The *p*-value for this difference was less than 0.05, indicating that the difference between male and female financial management scores is statistically significant. Despite the small difference in scores, the statistical significance suggests that gender disparities in financial literacy and management skills exist among BTVET students. These findings align with previous studies that have highlighted gender differences

in financial literacy, where males often outperform females in financial management skills (Atkinson & Messy, 2012; Bucher-Koenen & Lusardi, 2011; Lusardi & Mitchell, 2014). However, the minimal difference in your study suggests that the gender gap in financial literacy among BTVET students is relatively narrow, potentially reflecting the effectiveness of educational interventions aimed at reducing gender disparities in financial education.

Male students' financial confidence index is higher than their female counterparts' confidence index. However, gender has no significant influence on this characteristic. Access to loans and usage did not differ significantly between male and female students, which may reflect equal opportunities in access to financial resources such as student loans in BTVET institutions. Also, the results showed no significant gap in the parents' education of the male and female students; however, more than 50% of the parents for both genders had a college education or higher as illustrated in Table 1.

In addition, the five variables were used to measure parents' financial socialization, that is, parents discuss savings decisions, parents discuss spending decisions, parents have conversations about budgeting, parents discuss money matters, and parents discuss conversations about financial news, showed no significant influence of gender, although results suggest a trend where most students indicated that they engage in financial discussions with their parents.

Table 1 results show a significant difference between male and female students in the Technical and Education fields of study. This indicates that a significantly higher percentage of male students (42.64%) in the Technical field exhibit financial literacy competency compared to female students (10.33%). The overall percentage of 20.75% reflects the combined performance of both genders, but the substantial difference between males and females suggests a pronounced gender disparity in financial literacy within the Technical field. Conversely, in the Education field, a higher percentage of female students (24.35%) exhibit financial literacy competency compared to male students (2.33%). The overall percentage of 17.25% indicates that, unlike in the Technical field, females are outperforming males in financial literacy within the Education field. These findings highlight significant gender disparities in financial literacy within specific fields of study. In the Technical field, male students significantly outperform female students, while in the Education field, female students exhibit higher financial literacy than their male counterparts.

These findings highlight significant gender disparities in financial literacy within specific fields of study. In the Technical field, male students significantly outperform female students, while in the Education

field, female students exhibit higher financial literacy than their male counterparts. These findings agree with results discussed in (Atkinson & Messy, 2012; Barboza et al., 2018; Blossfeld et al., 2023; Chen & Volpe, 2002; Driva et al., 2016; Fonseca & Lord, 2019). Also, the Technical field is often perceived as male-dominated, leading to higher engagement and confidence among male students. Gender stereotypes may discourage female students from pursuing or excelling in technical disciplines, contributing to lower financial literacy rates and again, males may have more access to resources or mentorship opportunities within Technical fields, enhancing their financial literacy. Females might face barriers such as limited access to technical training or a lack of female role models in the field.

Furthermore, the education field traditionally attracts more female students, who may feel more comfortable and supported in this environment. This could lead to higher engagement and better performance in financial literacy among females in this field and most of the Educational programs in BTVET institutions often emphasize life skills, including financial literacy, which may align more closely with the interests and strengths of female students, leading to higher competency levels.

3.2. Financial literacy level by gender

Table 2 shows the results of the financial literacy level of the students. The majority (64.75%) of the students demonstrate a moderate level of financial literacy, with a slightly higher percentage observed among female students (70.85%) compared to male students (51.94%). This finding suggests that most students in the sample have basic knowledge of financial matters. About 28.68% of male students have a high financial literacy level, almost twice the proportion (14.76%) of female students with the same level of financial literacy. Interestingly, the percentage of students with low financial literacy level is relatively similar across genders, with 19.38% of males and 14.39% of females.

3.3. Factors influencing financial literacy among BTVET students by gender

The result of factors influencing financial literacy among students by gender is shown in Table 3. Columns 1–3 contain the OLS estimates of

Table 2. Financial literacy level by gender.

	Financial literacy category; *n* (%)			
Gender	High	Moderate	Low	Total
Male	37 (28.68)	67 (51.94)	25 (19.38)	129 (100)
Female	40 (14.76)	192 (70.85)	39 (14.39)	271 (100)
Total	77 (19.25)	259 (64.75)	64 (16.00)	400 (100)

Table 3. Factors influencing financial literacy among BTVET students by gender.

	(1)	(2)	(3)
Variables	WS	Male	Female
Gender (ref. male)			
Female	−0.867* (0.464)		
Age	0.123*** (0.044)	0.134* (0.080)	0.144*** (0.053)
Training years	−0.270 (0.407)	−1.538 (0.775)	−0.050 (0.486)
Work experience	−0.292 (0.204)	0.051 (0.370)	−0.616 (0.254)
Parents education	0.812** (0.391)	0.404* (0.793)	0.631 (0.456)
Financial behavior			
Financial management score	0.368*** (0.571)	0.596 (1.009)	0.779** (1.852)
Financial confidence	0.254*** (0.304)	0.332*** (0.596)	0.734** (0.361)
Loan access and usage	0.517 (0.509)	−0.285 (0.191)	0.529 (0.563)
Parents financial socialization			
Parents discuss savings decisions	0.733* (0.555)	−0.365 (1.205)	0.293** (0.631)
Parents discuss spending decisions	0.459*** (0.557)	0.244 (1.149)	0.519** (0.642)
Parents have conversations about budgeting	−0.084 (0.484)	−0.956 (1.080)	0.456 (0.548)
Parents discuss money matters.	−0.242 (0.608)	0.366 (1.163)	−0.186 (0.732)
Parents have conversations about financial news.	0.816 (0.414)	0.312 (1.096)	0.911 (0.562)
Financial education			
Majors			
Business	0.346 (1.024)	0.137 (1.794)	−0.735 (1.327)
Vocational	0.744 (1.023)	0.236 (1.766)	−0.227 (1.322)
Technical	0.535 (1.045)	0.683 (1.703)	−0.372 (1.430)
Social Sciences	−0.071 (1.076)	−0.218 (2.889)	−0.857 (1.345)
Financial education courses in school	−0.621 (0.414)	−0.311 (0.805)	0.032 (0.488)

Note: *, **, *** indicate significance at 10, 5, and 1%, respectively.

all the students in the sample, male and female students, respectively. The result shows that age is positively associated with the financial literacy of male students ($p < 0.10$) and female students ($p < 0.01$). While parents' education was found to positively associated financial literacy of male students ($p < 0.10$) and not with female students.

Results from Table 3, show significant association between age and financial literacy for both males and females. The positive association between age and financial literacy ($p < 0.10$) indicates that as male students grow older, their financial literacy tends to increase, although this association is statistically significant at a less stringent level. Similarly, the positive association between age and financial literacy for female students ($p < 0.01$) suggests that older female students also demonstrate higher financial literacy. The stronger significance level ($p < 0.01$) for females indicates a more robust relationship compared to males.

With parents' education and financial literacy, the positive association ($p < 0.10$) between parents' education and financial literacy for male students suggests that higher educational attainment by parents contributes to better financial literacy among male students, though this relationship is only marginally significant while for female students, parents' education

does not have a statistically significant effect on their financial literacy, suggesting other factors might be more influential for females in this regard.

Also, the positive association between age and financial literacy for both male and female students suggests that as students mature, they likely gain more experience and exposure to financial concepts, leading to improved financial literacy. This is consistent with the life-cycle hypothesis, which posits that as individuals age, they accumulate more knowledge and experience, including financial knowledge as shown in (Behrman et al., 2012; Lusardi & Mitchell, 2011; Van Rooij et al., 2011).

The stronger association in females ($p < 0.01$) could indicate that older female students might be more proactive in seeking out financial education or have more responsibilities that necessitate a greater understanding of financial management. This could be particularly relevant in contexts where financial independence or early adulthood responsibilities are encouraged or required.

In addition, the positive association between parents' education and male students' financial literacy aligns with existing literature suggesting that parental education (Al-Bahrani et al., 2020, Lusardi & Mitchell, 2011; Behrman et al., 2012; Van Rooij et al., 2011), particularly that of the father, can significantly influence a child's financial knowledge and behavior. Educated parents are more likely to discuss financial matters, model positive financial behavior, and provide resources that foster financial literacy in their children.

However, the lack of a significant association between parents' education and female students' financial literacy may point to other influential factors for females. For instance, social and cultural norms, access to financial education, or peer influences might play a more critical role in shaping financial literacy among female students. It is also possible that the educational environment or curriculum within the BTVET institutions might better support financial literacy development among males, with parental education being a contributing factor.

Again, financial confidence was also observed to have a positive relationship with the financial literacy of the male and female students at a significance level of $p < 0.01$ and $p < 0.05$, respectively. On the other hand, financial management scores, parents discussing savings and spending decisions had a positive and significant relationship with the financial literacy of female students which is not the case for their male counterparts.

Considering the OLS overall estimates of all students is shown in column 1. The age of the students is positively associated with financial literacy ($p < 0.01$), implying that as students grow older, their understanding of financial matters tends to increase. This finding could be ascribed to the increased exposure to financial matters over time or the accumulation of practical financial experiences as they age. Parents' education is also

positively associated with students' financial literacy scores ($p < 0.05$). This relationship aligns with the concept of concerted cultivation, where parents with higher education level may be better equipped pass on financial knowledge and skills to their children either through direct teaching or demonstrating positive financial behavior (Croson & Gneezy, 2009). This finding is further corroborated by Kardash et al. (2023) who documented that mothers' education level plays a significant role in the financial socialization of children. Financial management score, used as a proxy for the financial management abilities of the students, is another significant predictor of the student's financial literacy in the positive direction ($p < 0.01$). This outcome suggests that students with better financial management abilities are more financially literate. This relationship underscores the importance of practical financial skills in improving individuals' financial knowledge. Parents having interactions with students on their savings and spending decisions were found to be positively and significantly associated with the students' financial literacy. This result suggests that engaging children in conversations about financial matters with parents could bolster their interest in financial topics, enhancing their financial literacy. This finding aligns with LeBaron et al. (2020), who posited that financial education provided by parents can have long-lasting effects on their children's financial behavior.

4. Conclusions

This study provides evidence of a significant gender gap in financial literacy among students enrolled in BTVET institutions in Uganda. On average, male students significantly outperformed female students in financial literacy assessment. Although most students demonstrated a moderate level of financial literacy, the proportion of male students with high financial literacy was twice that of female students. Gender was identified as significant determinant of financial literacy of the students. Other major factors influencing financial literacy were identified, differing by gender. Age and financial confidence emerged key determinants of financial literacy for both males and females, only parents' education influenced male students' financial literacy and in contrast, the financial literacy of the female students was primarily shaped by their financial management score, parents discuss savings and spending decisions.

5. Recommendations

Given the findings from this study, there is need for continuous strategies to reduce the gender gap in financial literacy. This could include

gender-sensitive financial education programs in BTVET institutions, mentoring for female students, or increased awareness about financial literacy importance of financial literacy. Understanding the specific barriers that females face in acquiring financial literacy could help design more effective interventions. Engage parents in financial literacy programs, especially for male students, to reinforce the importance of financial education at home. For female students, alternative strategies such as school-based financial literacy workshops, library partnerships, and or female mentorship programs might be more effective.

Libraries could serve as accessible community hubs for financial literacy resources and support. By partnering with BTVET institutions, libraries can provide financial literacy materials, host workshops, and facilitate access to educational resources, offering a pathway to improve financial literacy among underrepresented groups, including women.

6. Implications for policy and practice

These gender disparities underscore the importance of tailoring financial literacy programs to address the specific needs of students in different fields of study. In Technical fields, efforts should focus on encouraging female participation and providing targeted support to enhance their financial literacy. Conversely, in Education fields, strategies should be developed to improve male students' financial literacy, potentially by integrating more practical financial management training into the curriculum.

These findings highlight the need for targeted financial education programs that consider both age and parental influence. For younger students, introducing financial literacy earlier in their education could help bridge the gap as they age. Additionally, programs tailored to female students that consider alternative influences on financial literacy such as mentorship, peer networks, and direct financial education may be more effective than those focusing on parental background alone.

This study suggest the following policy recommendations; promote gender equality in technical education were development of initiatives to encourage female students to pursue technical fields and provide them with the necessary support to succeed, including mentorship programs, scholarships, and awareness campaigns is encouraged. Enhancement of financial literacy in male-dominated fields, here in fields where males underperform, such as education, targeted interventions that engage male students, such as interactive workshops, peer-to-peer learning, and real-world financial management simulations should be created. Also, parental engagement in financial literacy programs should be encouraged especially for male students, to reinforce the importance of financial education at home. For female students, alternative strategies such as

school-based financial literacy workshops or female mentorship programs might be more effective.

Using library involvement in financial literacy initiatives such that libraries, as community centers, could play an instrumental role in improving financial literacy among underrepresented groups. By providing financial literacy resources, hosting community workshops, and facilitating access to practical financial education, libraries can create accessible pathways for lifelong financial learning.

Author contributions

Bruno L. Yawe assisted in the conceptualization of the research ideas, design, data interpretation, and critical reading, as well as providing a final approval version for publication. Hellen Namawejje conceptualized the research idea, collected data, analyzed data, interpreted results, and wrote the manuscript.

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author [HN at hnamawejje@gmail.com]

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