



Gender Equality and Sustainability in Vietnamese Higher Education: Students' Perspectives

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Abstract

Gender equality is one of the focal points in the Sustainable Development Goals (SDGs), which face stiff confrontation in most developing nations because of cultural barriers and stereotypical behaviours towards females. However, measures must be implemented in most organisations in developing nations to ensure gender equality and inclusiveness of females in all sectors. This study investigated the measures of sustaining gender equality momentum through a survey of Vietnamese university students analysed using descriptive and inferential statistics to understand the efforts in attaining SDG 5. The analysis revealed that male and female students have similar views of gender equality measures across the curriculum and teaching practice, institutional policies and culture, and personal experience and perspective. The significant differences found in the respondents' opinions across their years of study are opined to tilt towards the first-year students. Therefore, it is recommended that the university management make known their gender equality stand and reiterate it on formal occasions such as open days and orientation exercises for first-year students. In addition, it is suggested that universities fund training that centres on gender equality and male staff and students should be in attendance to enable them to understand the global shift from patriarchal culture. The study's findings contribute practically and theoretically to the global discourse on gender equality, with implications for increasing the awareness and need for gender equality in academic environments of developing nations.

Keywords: Education; Gender Equality; Inclusiveness; Sustainable Development Goals

Introduction

Gender segregation at the top levels of management remains prevalent in many organisations despite the similarities in leadership styles between men and women [1]. The discussion surrounding gender equality is crucial, urgent, and integral to a sustainable future [2], for governments, corporations, academic institutions, non-governmental organisations, and society [3]. Sadly, achieving gender parity remains a distant goal, with prejudice and bias still pervasive across the globe [4], which contributed to its recognition as a Sustainable Development Goal (SDG) by the United Nations [5]. Gender equality is paramount to achieving a progressive society, thriving higher education institutions, and inclusive workplaces [6]. Historically, women are underrepresented in various science, technology, engineering, and mathematics disciplines [7]. Therefore, it is crucial to understand the factors influencing students' persistence in some disciplines from diverse socio-demographic backgrounds (Dust, 2024).

In Vietnam, significant progress is being made towards achieving gender equality in higher education [8] compared to other developing nations [9-11]. However, recent reports indicate that despite these strides, women continue to face barriers in certain disciplines (UNESCO, 2022). Furthermore, gender-based stereotypes persist, shaping students' experiences in higher education institutions, and students' perspectives are often limited in discussions on how to effectively integrate SDGs into university curricula [12]. According to [13], there are contradictions between the policies of Vietnamese educators concerning gender equality and the practices within the educational system. [14], contend that entrenched gender stereotypes disadvantage women in Vietnamese high schools, affecting both educators and students alike. The high school curriculum has also been criticised for perpetuating traditional views of gender roles [15, 16].

Studies also opined that patriarchal Confucian ideas where men are portrayed as possessing more social qualities could also cement gender-related issues in the country, which negates gender policy [17][16][18].

Past research on gender equality in higher education has predominantly focused on policy analysis or faculty perspectives [19-22]. Therefore, this study seeks to explore Vietnamese students' perspectives on gender equality within higher education by examining institutional practices, teaching methods, and institutional culture. While institutional policies aimed at promoting gender equality exist, limited attention has been given to how these policies are experienced at the student level. Understanding these perspectives is crucial for creating more inclusive and equitable educational environments. This study will address the following research questions: (1) How do students perceive gender equality in their academic environment? (2) How do the curriculum and teaching practices ensure gender equality? Moreover, (3) What role do institutional policies play in shaping these perceptions? This study is significant because it illuminates an underexplored dimension of gender equality in Vietnamese higher education by focusing on students' perspectives. Whereas much of the

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existing research is centred on faculty viewpoints and policy analysis, this study takes a bottom-up approach by obtaining students' views directly impacted by institutional policy and educational practices.

Literature Review

Overview of Gender Equality

Women have consistently advanced initiatives that promote environmental sustainability, education, and health [23]. Despite their efforts, achieving gender equality remains a challenge. The global movement towards sustainability encourages educators to integrate gender-related issues into the curricula a crucial focal point of the Sustainable Development Goals [24]. In the workplace, the persistent gender pay gap limits women's financial autonomy [25]. This issue extends to education, where gender inequality is paramount to developing nations [26, 27] [10]. Although Vietnam, a rapidly developing country, is recording significant progress in women's leadership in higher education and the workforce [28]; The Voice of Vietnam, 2024), certain gender-related issues persist. Gender equality has been increasingly incorporated into Vietnamese educational curricula from preschool through high school, often through extracurricular activities (Ahn, 2022). However, in higher education, the focus on increasing student numbers may have overtaken equality, creating disparities in student experiences based on gender status [29].

Curriculum and Teaching Practice

Despite progress in various sectors, gender and women's contributions continue to be underrepresented in higher education curricula worldwide [30]. For higher education to align with global sustainability agendas, significant reforms are needed, particularly in achieving the 2030 Global Goals, which call for education systems that promote empowerment [31]. Although gender mainstreaming in curricula has been emphasised as a policy priority in Vietnam, some challenges persist in its integration [23]. There is growing concern about the declining focus on feminist education, leading to a perceived crisis in gender studies [32, 33]. This decline highlights the need for more gender-inclusive curricula, especially in modern higher education, where feminist perspectives are critical but increasingly marginalised [34]. Although technology-enabled education is proposed as a crucial tool for abating this challenge [35], gender stereotypes and institutional power dynamics largely limit the success despite the education policies emphasising workforce development [36].

Institutional Policies and Culture

Institutional policies play a crucial role in shaping gender equality in higher education. Women face significant challenges in leadership roles in public and private universities tasked with preparing students for a globalised, gender-sensitive world [37]. While Vietnam's education policies, such as gender-sensitive admissions and scholarships for women in underrepresented fields, aim to address these disparities cultural norms and informal networks often perpetuate gender biases, favouring male students in leadership positions. Research shows that boys and girls in developing countries, including Vietnam, often have similar skill sets upon completing secondary education, but their access to higher education and the returns on those skills differ significantly based on gender [38]. Non-cognitive skills, for example, are more important for boys, whereas both cognitive and non-cognitive skills predict enrollment for girls, yet the gender gap in enrollment remains [39]. These disparities suggest that the institutional culture within universities needs to be addressed beyond formal policies to ensure true gender equity [40].

Personal Experiences and Perspectives

Students' experiences and perceptions of gender equality in higher education provide critical insights into the gaps between formal policies and lived realities [41]. Found that while many students are aware of gender inequalities, there are still significant differences in opinion regarding women's rights and roles in society. Female students frequently report subtle forms of discrimination, such as being overlooked for leadership positions in the academic environment or being steered away from certain fields [42]. Research by [43] revealed that female students often face informal barriers, such as being assigned supportive roles rather than leadership roles in group projects, reflecting a broader cultural tendency to reinforce traditional gender norms. This dynamic is more pronounced in male-dominated fields like engineering, where male students tend to dominate discussions and receive more mentorship from faculty [44]. Further studies highlight how gender-based stereotypes shape career aspirations. Female students often feel societal pressure to pursue 'feminine' careers, such as teaching or arts, while male students are steered towards 'masculine' fields like engineering and technology [42]. Interestingly, these gender norms also affect male students, who are discouraged from entering fields traditionally viewed as feminine, such as nursing or early childhood education [41].

Research Methodology

The study investigated gender equality in Vietnam, using curriculum and teaching experience, institutional policies and culture, and personal experience and perspective of students in four selected universities. A survey was adopted to understand a target population's characteristics and compare the results from different groups of respondents in the same domain [45]. From the population of students in Can Tho University, University of Danang, Hue University, and Thai Nguyen University, a sample size of 399 was computed using Yemane's formula (refer to equation (1)) where N is the population, e is margin of error at 5%, and n is the sample size. In addition, a snowballing approach was deployed in the study, i.e., the respondents were asked to forward the link to the questionnaire to their colleagues and friends within the same faculties of the selected universities to obtain a larger number of responses. A total of 470 responses were received, of which 452 were found valid for data analysis. The high response rate is suitable for achieving the aim of this study.

$$n = N / ((1 + N(e^2))) \quad (1)$$

The survey was designed to elicit data from the respondents, which comprised (i) the background information and (ii) the constructs of curriculum and teaching experience, institutional policies and culture, and personal experience and perspective elicited from extant literature. The background information comprises gender, age, year of study, and family child status. The questions on the second part of the survey were asked using the 5-Likert scale in which one implied 'strongly disagree', to five which represented 'strongly agree' [46]. All the participants read and indicated their consent to ethical notes before filling out the survey and assured confidentiality of the data received and voluntary to withdraw at any point in the survey. The background information of the respondents was analysed using frequency and percentage. The constructs of curriculum and teaching experience, institutional policies and culture, personal experience and gender equality were analysed using descriptive and inferential statistics using the mean score, standard deviation, Mann-Whitney U test and Kruskal-Wallis H test. The normality of the dataset was analysed using the Shapiro-Wilk test, the Kruskal-Wallis H test (to determine significant differences

for three or more groups of respondents), and the Mann-Whitney U test to determine significant differences for two groups of respondents [47]. After that, a post hoc test was conducted using pairwise Mann-Whitney tests and applying Bonferroni adjustment to control Type 1 errors [48] to determine the main groups responsible for the significant difference in the study [47] [49].

Data Analysis

Table 1 shows the background information of the respondents. Most of the respondents are female (80.5%), aged less than 20 years (23.7%), 20-24 years (72.1%), 25-29 years (2.2%), and 30 years and above (2.0%), majorly from Thai Nguyen University (64.8%). The respondents are in various years in their undergraduate programme, namely first year (3.5%), second year (22.3%), third year (39.2%), fourth year (29.9%), and postgraduate (5.1%). A limited number of respondents are the only child in the family (7.7%), while some have brothers (58.6%) and others have sisters (33.6%).

Tables 2-4 cross-tabulated the respondents' background information. Most female respondents have a brother; while respondents who chose not to disclose their gender had either a brother or sister [Table 2].

Table 3 shows a cross-tabulation of the respondents' age and year of study. Most of the respondents are under 24 years of age in their third and fourth years of undergraduate study, and the majority of the respondents in the postgraduate programme are over 24 years of age.

Table 4 shows a cross-tabulation of the respondents' gender and universities. Table 4 further confirms that most of the respondents are female, which gives credibility to the data to uncover gender equality in Vietnamese universities.

Table 5 shows the mean score, standard deviation, and Mann-Whitney U test of the constructs of curriculum and teaching practices, institutional policies and culture, personal experiences and perspectives according to the overall rating and that of males and females. In the constructs of curriculum and teaching practices, 'both male and female students are equally encouraged to participate in classes (C6)' has the highest mean score of 4.15, followed by 'my teachers treat male and female students equally (C7)' with a mean score of 4.14, while 'gender equality is a topic of discussion in my classes (C4)' is the least ranked variable with a mean score of 3.47. In the category of institutional policies and culture, 'there are equal opportunities for male and female students in extracurricular activities (E3)' has the highest mean score of

Table 1: Background information of the respondents.

Background information	Categories	Frequency	Percentage
Gender	Male	84	18.6
	Female	364	80.5
	Prefer not to disclose	4	0.9
Age	Less than 20 years	107	23.7
	20-24 years	326	72.1
	25-29 years	10	2.2
	30 years and above	9	2.0
Year of Study	First-year	16	3.5
	Second year	101	22.3
	Third year	177	39.2
	Fourth-year	135	29.9
	Postgraduate	23	5.1
Family child status	The only child in the family	35	7.7
	Has a brother	265	58.6
	Has a sister	152	33.6
University	Can Tho University	63	13.9
	University of Danang	65	14.4
	Hue University	31	6.9
	Thai Nguyen University	293	64.8

Table 2: Cross-tabulation of the gender and family child status of the respondents.

		Family child status			Total
		The only child in the family	Has a brother	Has a sister	
Gender	Male	13	41	30	84
	Female	22	221	121	364
	Prefer not to disclose	0	3	1	4
Total		35	265	152	452

Table 3: Cross-tabulation of age and year of study of the respondents.

		Year of Study					Total
		First-year	Second year	Third year	Fourth-year	Postgraduate	
Age	Less than 20 years	16	79	12	0	0	107
	20-24 years	0	21	165	133	7	326
	25-29 years	0	1	0	1	8	10
	30 years and above	0	0	0	1	8	9
Total		16	101	177	135	23	452

Table 4: Cross-tabulation of gender and universities of respondents.

		Type of University				Total
		Can Tho University	University of Danang	Hue University	Thai Nguyen University	
Gender	Male	21	6	0	57	84
	Female	40	58	31	235	364
	Prefer not to disclose	2	1	0	1	4
Total		63	65	31	293	452

Table 5: Opinions of respondents on gender equality based on gender.

	Overall		Male		Female		M-W (Sig.)
	Mean	SD	Mean	SD	Mean	SD	
Curriculum and teaching practices							
C1-The content and assignments in my courses are gender inclusive.	3.64	0.99	3.63	1.14	3.64	0.96	0.526
C2-Vietnamese education promotes gender equality effectively.	3.81	0.95	3.90	1.01	3.78	0.92	0.111
C3-My teachers address gender equality in their lessons.	3.69	0.99	3.58	1.17	3.71	0.95	0.671
C4-Gender equality is a topic of discussion in my classes.	3.47	1.07	3.45	1.29	3.47	1.02	0.708
Both male and female students are equally encouraged to participate in classes.	4.15	0.93	4.01	1.15	4.18	0.87	0.548
My teachers treat male and female students equally.	4.14	0.94	4.01	1.17	4.17	0.88	0.652
C7-The university takes effective measures to address gender-based discrimination.	3.92	0.96	3.86	1.23	3.94	0.89	0.671
Institutional policies and culture							
My university has clear policies on gender equality.	3.84	0.95	3.89	1.17	3.83	0.90	0.119
E2-I am aware of gender equality initiatives at my university.	3.56	1.04	3.68	1.17	3.53	1.01	0.097
There are equal opportunities for male and female students in extracurricular activities.	4.17	0.91	4.10	1.07	4.18	0.87	0.911
E4-My university supports female leadership in student organisations.	4.02	0.99	3.96	1.21	4.02	0.94	0.596
E5-Gender bias is not an issue in my university.	3.95	0.96	4.02	1.05	3.93	0.94	0.183
E6-I have witnessed gender discrimination among students or staff.	2.99	1.40	3.19	1.49	2.93	1.38	0.115
E7-Gender equality training should be mandatory for all students.	4.01	0.91	3.99	1.06	4.01	0.87	0.655
The university administration supports initiatives to promote gender equality.	3.95	0.93	3.99	1.09	3.94	0.89	0.221
E9-There are discussions on gender equality in student forums.	3.80	0.94	3.82	1.11	3.80	0.90	0.410
E10-My university promotes gender equality in all its programs.	3.87	0.95	3.94	1.09	3.84	0.91	0.124
E11-There are sufficient resources and support services available for addressing gender-related issues.	3.82	0.94	3.83	1.10	3.82	0.91	0.465
E12-Gender equality is a priority in my university's strategic goals.	3.73	0.93	3.75	1.07	3.72	0.90	0.382
E13-Efforts to promote gender equality have led to noticeable improvements in the university environment.	3.88	0.93	3.96	1.10	3.87	0.89	0.108
Personal experience and perspective							
P1-I feel that male and female students are treated equally by teachers.	4.09	0.96	4.01	1.16	4.10	0.91	0.926
P2-I feel safe and respected regardless of my gender.	4.15	0.89	4.10	1.05	4.17	0.86	0.972
P3-Gender equality is part of the University culture.	4.04	0.91	4.05	1.06	4.04	0.88	0.502
My university actively works to promote gender equality.	3.94	0.95	3.95	1.11	3.94	0.91	0.440
P5-Male and female students have equal opportunities to excel in all subjects.	4.18	0.92	4.11	1.09	4.20	0.88	0.935
P6-My learning experience has improved due to gender equality initiatives.	3.83	0.98	3.86	1.16	3.82	0.94	0.320
P7-I believe gender equality training is essential for all students.	4.10	0.92	3.95	1.13	4.13	0.86	0.477
P8-Gender stereotypes are still prevalent in the classroom environment.	3.41	1.23	3.54	1.37	3.37	1.19	0.135

Note: SD = Standard deviation, M-W = Mann-Whitney U test

4.17, while the ‘I have witnessed gender discrimination among students or staff (E6)’ has the least mean score of 2.99. On the part of personal experience and perspective, ‘male and female students have equal opportunities to excel in all subjects (P6)’ has the highest mean score of 4.18, followed by ‘I feel safe and respected regardless of my gender (P2)’ with a mean score of 4.15, while the least score of 3.41 is recorded for ‘gender stereotypes are still prevalent in the classroom environment (P9)’.

The Mann-Whitney U test was conducted on the variables used to investigate curriculum and teaching practices, institutional policies and culture, and personal experience and perspective [Table 5]. Interestingly, there is no significant difference in the opinions of males and females across the 28 variables. This implies that males and females have similar views on curriculum and teaching practices, institutional

policies and culture, and personal experience and perspective in this study.

Table 6 shows the respondents’ mean score and standard deviation based on the year of study of the respondents, namely first year, second year, third year, fourth year and postgraduate. The results of the analysis revealed that most of the variables are over 3.00, except for ‘I have witnessed gender discrimination among students or staff (E6), with a mean score of 1.94 for the first-year students, 2.84 (second-year students), and 2.91 (postgraduate students) in this study [Table 6].

The Kruskal-Wallis H test shows the significant differences between the respondents in the year of study [Table 6]. The variables with a significant difference in ‘curriculum and teaching practices’ include ‘the content and assignments in my courses are gender inclusive (C1)’,

Table 6: Opinions of respondents on gender equality based on year of study.

	First-year		Second year		Third year		Fourth-year		Postgraduates		K-W (Sig)
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Curriculum and teaching practices											
C1	3.13	0.72	3.44	1.10	3.69	0.94	3.77	0.99	3.78	0.85	0.007*
C2	3.13	0.96	3.68	1.01	3.79	0.92	3.96	0.92	4.09	0.73	0.005*
C3	3.31	1.01	3.49	1.10	3.76	0.94	3.77	0.98	3.78	0.85	0.108
C4	3.06	0.77	3.20	1.18	3.51	1.03	3.64	1.04	3.70	1.06	0.010*
C5	4.38	0.96	4.06	0.98	4.20	0.87	4.10	0.99	4.30	0.76	0.509
C6	4.31	1.14	4.06	0.96	4.20	0.87	4.07	1.02	4.39	0.72	0.340
C7	3.38	0.96	3.81	1.07	4.00	0.87	3.97	0.96	3.96	1.02	0.083
Institutional policies and culture											
E1	3.31	0.48	3.75	1.09	3.82	0.87	3.93	0.97	4.17	0.94	0.007*
E2	3.00	0.82	3.34	1.16	3.59	0.96	3.72	1.05	3.87	0.92	0.007*
E3	4.25	1.06	4.05	1.01	4.19	0.82	4.18	0.94	4.43	0.66	0.480
E4	3.75	0.86	3.88	1.02	4.05	0.97	4.08	1.01	4.17	1.03	0.168
E5	3.88	0.81	3.82	0.97	3.93	0.99	4.01	0.96	4.26	0.81	0.210
E6	1.94	0.85	2.84	1.40	3.02	1.37	3.21	1.43	2.91	1.50	0.008*
E7	3.94	0.85	3.85	0.95	4.06	0.87	4.01	0.93	4.39	0.72	0.089
E8	3.50	1.10	3.79	0.96	4.00	0.89	4.00	0.95	4.30	0.70	0.028*
E9	3.44	0.81	3.57	0.98	3.88	0.94	3.88	0.93	4.04	0.77	0.013*
E10	3.25	0.58	3.67	0.95	3.92	0.95	3.97	0.96	4.09	0.79	0.001*
E11	3.13	0.62	3.67	0.96	3.85	0.96	3.94	0.91	4.04	0.93	0.002*
E12	3.19	0.66	3.57	0.94	3.80	0.90	3.80	0.97	3.83	0.89	0.016*
E13	3.50	0.82	3.74	0.91	3.94	0.94	3.89	0.97	4.30	0.63	0.016*
Personal experience and perspective											
P1	4.25	1.06	3.97	1.08	4.10	0.93	4.08	0.94	4.43	0.66	0.334
P2	4.25	0.77	4.07	1.00	4.16	0.87	4.15	0.89	4.48	0.67	0.479
P3	3.75	0.93	3.94	1.02	4.06	0.88	4.08	0.88	4.35	0.78	0.260
P4	3.38	0.89	3.84	1.01	3.99	0.92	3.98	0.97	4.26	0.69	0.026*
P5	4.19	0.98	4.12	0.94	4.20	0.91	4.17	0.94	4.39	0.84	0.712
P6	3.50	0.73	3.73	1.06	3.83	0.96	3.90	0.99	4.04	0.93	0.192
P7	4.06	0.85	4.05	0.97	4.07	0.93	4.15	0.87	4.22	0.95	0.849
P8	3.19	1.05	3.36	1.20	3.31	1.26	3.65	1.16	3.13	1.39	0.063

Note: SD = Standard deviation, K-W = Kruskal-Wallis H test, * = significant difference < 0.05

‘Vietnamese education promotes gender equality effectively (C2)’, and ‘gender equality is a topic of discussion in my classes (C4)’ with values of 0.007, 0.005, and 0.010 respectively. The significant differences in institutional policies and culture include E1, E2, E6, and E8-E13, while ‘my university actively works to promote gender equality (P5)’ has a significant difference of 0.026 in the category of personal experience and perspective.

The post hoc analysis of the fifteen variables with significant differences identified through the Kruskal-Wallis H test indicated in Table 6 is conducted [Table 7]. Interestingly, the post hoc analysis conducted using pairwise Mann-Whitney tests and applying Bonferroni adjustment to control Type 1 errors shows significant differences in eleven variables. The results of the analysis show that significant differences were revealed between the first-year students and other older students, namely the third-year, fourth-year, and postgraduate students, except for the adjusted significant difference of 0.029 indicated between the second-year and fourth-year students on ‘gender equality is a topic of discussion in my classes (C4)’. Interestingly, first-year students are a common contributor to all the results revealed in the study [Table 7].

Table 8 shows the respondents’ mean scores, standard deviation and Kruskal-Wallis H test results based on their university. The mean scores of the respondents across the universities are similar,

mostly above 3.00 for the variables. Interestingly, ‘witnessing gender discrimination among students or staff (E6)’ has the lowest mean score in the Can Tho University (M=2.94), Hue University (M=2.84), and University of Danang (M=2.60) in this study [Table 8]. A similar low mean value is shown for the first-year, second-year and postgraduate respondents [Table 6]. In addition, the Kruskal-Wallis H test revealed significant differences in the respondents’ rating in most of the constructs of curriculum and teaching practices, institutional policies and culture and personal experiences and perspectives [Table 8].

The post hoc analysis of the sixteen variables with significant differences identified through the Kruskal-Wallis H test indicated in [Table 8] is shown in [Table 9]. Applying Bonferroni adjustment to control Type 1 errors revealed significant differences in fourteen variables. Significant differences are noticed in respondents’ opinions in Thai Nguyen University and Can Tho University for most variables. The analysis results implied that while Vietnamese universities are making giant strides in addressing gender equality in the education system through policies at Thai Nguyen University [50] and international collaboration (USAID, 2024), there is still room for improvement.

Discussion

This study investigated the gender equality issue in Vietnamese universities using the opinions of both male and female students

Table 7: Post hoc analysis of the variables with significant differences in year of study.

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.a
C1-The content and assignments in my courses are gender inclusive					
First year-Fourth year	-96.962	35.527	-2.981	0.003	0.029
C2-Vietnamese education promotes gender equality effectively.					
First year-Fourth year	-106.206	32.419	-3.276	0.001	0.011
First year-Postgraduate	-118.234	39.916	-2.962	0.003	0.031
C4-Gender equality is a topic of discussion in my classes					
Second year-Fourth year	-49.139	16.520	-2.975	0.003	0.029
My university has clear policies on gender equality.					
First year-Fourth year	-104.555	32.630	-3.204	0.001	0.014
First year-Postgraduate	-135.365	40.175	-3.369	0.001	0.008
E2-I am aware of gender equality initiatives at my university.					
First year-Fourth year	-93.495	33.117	-2.823	0.005	0.048
E6-I have witnessed gender discrimination among students or staff.					
First year-Third year	-97.630	33.330	-2.929	0.003	0.034
First year-Fourth year	-115.816	33.757	-3.431	0.001	0.006
E10-My university promotes gender equality in all its programs.					
First year-Third year	-102.345	32.350	-3.164	0.002	0.016
First year-Fourth year	-112.012	32.765	-3.419	0.001	0.006
First year-Postgraduate	-120.181	40.342	-2.979	0.003	0.029
E11-There are sufficient resources and support services available for addressing gender-related issues.					
First year-Third year	-104.331	32.418	-3.218	0.001	0.013
First year-Fourth year	-119.240	32.833	-3.632	0.000	0.003
First year-Postgraduate	-130.019	40.426	-3.216	0.001	0.013
E12-Gender equality is a priority in my university's strategic goals.					
First year-Fourth year	-95.641	32.668	-2.928	0.003	0.034
E13-Efforts to promote gender equality have led to noticeable improvements in the university environment.					
First year-Postgraduate	-116.255	40.202	-2.892	0.004	0.038
P5-My university actively works to promote gender equality.					
First year-Postgraduate	-120.973	40.063	-3.020	0.003	0.025

Table 8: Opinions of respondents on gender equality based on university.

Code	Can Tho University		Hue University		University of Danang		Thai Nguyen University		K-W (Sig)
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Curriculum and teaching practices									
C1	3.87	0.92	3.58	1.26	3.42	0.92	3.65	0.98	0.017*
C2	3.95	0.97	3.74	1.03	3.55	0.98	3.84	0.91	0.056
C3	3.75	1.03	3.87	1.12	3.40	0.97	3.72	0.97	0.028*
C4	3.35	1.15	3.45	1.21	3.15	1.09	3.57	1.03	0.028*
C5	4.35	0.85	4.32	1.05	4.37	0.74	4.04	0.95	0.003*
C6	4.38	0.83	4.45	0.85	4.26	0.91	4.03	0.96	0.001*
C7	4.05	0.94	3.87	1.12	3.78	0.87	3.94	0.97	0.242
Institutional policies and culture									
E1	3.95	0.94	3.87	1.15	3.69	0.93	3.84	0.94	0.374
E2	3.68	1.00	3.42	1.18	3.29	1.10	3.61	1.02	0.104
E3	4.41	0.78	4.35	0.95	4.34	0.76	4.06	0.94	0.003*
E4	4.25	0.95	4.10	0.94	4.11	0.99	3.94	1.00	0.045*
E5	4.11	0.94	4.23	0.92	4.02	0.89	3.87	0.98	0.062
E6	2.94	1.47	2.84	1.57	2.60	1.32	3.11	1.37	0.061
E7	4.35	0.72	4.03	0.95	4.08	0.87	3.92	0.93	0.007*
E8	4.29	0.71	3.97	1.02	3.88	0.94	3.89	0.95	0.022*
E9	3.95	0.87	3.71	1.01	3.68	0.92	3.81	0.96	0.317
E10	4.10	0.80	3.74	1.06	3.71	0.88	3.86	0.97	0.097
E11	3.98	0.91	3.71	1.10	3.66	0.91	3.83	0.94	0.137
E12	3.81	0.93	3.68	1.08	3.52	0.85	3.76	0.93	0.155
E13	4.13	0.85	3.81	1.19	3.71	0.90	3.88	0.92	0.043*
Personal experience and perspective									
P1	4.38	0.77	4.32	0.94	4.28	0.94	3.96	0.98	0.000*
P2	4.43	0.76	4.32	0.91	4.32	0.79	4.04	0.92	0.001*
P3	4.33	0.76	4.13	1.02	4.06	0.92	3.97	0.92	0.021*
P4	4.22	0.83	4.00	1.15	3.88	0.91	3.89	0.95	0.049*
P5	4.44	0.78	4.39	0.92	4.37	0.80	4.06	0.96	0.001*
P6	3.95	0.89	3.90	1.14	3.69	1.04	3.82	0.97	0.482
P7	4.35	0.83	4.39	0.92	4.22	0.87	3.98	0.93	0.001*
P8	3.35	1.32	3.81	1.25	3.40	1.22	3.38	1.20	0.260

Note: SD = Standard deviation, K-W = Kruskal-Wallis H test, * = significant difference < 0.05

Table 9: Post hoc analysis of the variables with significant differences in university groups.

	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.a
C1-The content and assignments in my courses are gender inclusive					
University of Danang-Can Tho University	68.819	21.750	3.164	0.002	0.009
C4-Gender equality is a topic of discussion in my classes					
University of Danang-Thai Nguyen University	-49.002	17.216	-2.846	0.004	0.027
Both male and female students are equally encouraged to participate in classes					
Thai Nguyen University-Can Tho University	44.718	16.831	2.657	0.008	0.047
My teachers treat male and female students equally.					
Thai Nguyen University-Can Tho University	49.165	16.881	2.912	0.004	0.022
Thai Nguyen University-Hue University	61.694	22.958	2.687	0.007	0.043
E3-There are equal opportunities for male and female students in extracurricular activities					
Thai Nguyen University-Can Tho University	50.287	16.787	2.996	0.003	0.016
E4-My university supports female leadership in student organisations.					
Thai Nguyen University-Can Tho University	45.219	17.053	2.652	0.008	0.048
E7-Gender equality training should be mandatory for all students.					
Thai Nguyen University-Can Tho University	58.288	17.069	3.415	0.001	0.004
The university administration supports initiatives to promote gender equality.					
Thai Nguyen University-Can Tho University	50.275	17.034	2.951	0.003	0.019
E13-Efforts to promote gender equality have led to noticeable improvements in the university environment.					
University of Danang-Can Tho University	62.236	21.833	2.851	0.004	0.026
P1-I feel that male and female students are treated equally by teachers					
Thai Nguyen University-Can Tho University	56.187	16.963	3.312	0.001	0.006
P2-I feel safe and respected regardless of my gender.					
Thai Nguyen University-Can Tho University	55.887	16.805	3.326	0.001	0.005
P3-Gender equality is part of the University culture.					
Thai Nguyen University-Can Tho University	50.416	17.000	2.966	0.003	0.018
P5-Male and female students have equal opportunities to excel in all subjects.					
Thai Nguyen University-Can Tho University	54.277	16.797	3.231	0.001	0.007
P7-I believe gender equality training is essential for all students.					
Thai Nguyen University-Can Tho University	53.251	16.936	3.144	0.002	0.010
Thai Nguyen University-Hue University	63.746	23.032	2.768	0.006	0.034

to understand the measures put in place to combat the menace and students' experience of gender equality discourse. The results of the analysis revealed no significant difference in the opinions of male and female students in Vietnamese universities. The findings point to the upholding of the Constitution of 1946 in Vietnam, which states that men and women are equal (ICRW, 2015). However, the opinion of the female respondents on 'Vietnamese education promotes gender equality effectively (C2)' is rated low compared to the men [Table 5]. Perhaps there are certain subtle prejudices against women that need to be addressed. This finding aligns with the submission of [51] in Brazil, where females are given education opportunities backed up by policy, but translating it to empowerment, they face challenges due to gender and cultural barriers. Considering the overall rating of the respondents on the measures in curriculum and teaching practices in Vietnamese universities, it can be inferred that there are great efforts to uphold gender equality issues compared to other developing nations such as Egypt [9], Jordan [10], and Pakistan [52, 53]. The gender equality index of Vietnam increased from 83rd position to 72nd, also confirming the state of attaining Sustainable Development Goal 5 in the country [54].

While the respondents' gender did not show any significant difference, the analysis results using the respondent's year of study show otherwise in the curriculum and teaching practices. The significant difference was noticed in 'the course being gender inclusive (C1)', 'the promotion of gender equality effectively (C2)', and 'gender equality is a topic of discussion in my classes (C4)'. The post hoc results show that the significant difference was mostly reported between the first-

year students and their seniors. It is arguable that first-year students are still new to the university system and may not have a full grasp of core courses peculiar to their chosen profession and the proactive actions of the university to ensure gender equality. However, the mode of delivering coursework and group assignments in which females are chosen to second a male group leader to assert gender disparity could be a concern as the students progress in the study [43]. The knowledge of the lecturers and professors also plays a fundamental role in promoting gender equality effectively, especially in providing an equitable learning environment and experience for junior university students.

The analysis results on the 13 items that describe the institutional policies and culture to enhance gender equality reveal that female students' scores are mostly smaller than their male counterparts, although without a significant difference [Table 5]. On the other hand, significant differences were indicated across the year of study of the respondents in 9 out of 13 institutional policies and culture variables in this study. This finding possibly points to the need to enforce institutional policies and culture that promote gender equality. These results confirmed past studies that policy enactment may not produce the desired results if not enforced appropriately [55]. Interestingly, the awareness of the gender equality initiative (E2) is low among females [Table 5] and among first-year students [Table 6], which can contribute to understanding the efforts of the universities toward gender equality. Perhaps female students' awareness of gender equality contributes to the rating of the variables describing the institutional policies and culture put in place by the university management. Therefore, the need

to further sensitise the university community (both staff and students) of the gender equality measures to boost female students' confidence is essential.

The personal experiences and perspectives of the respondents give interesting results on gender equality in Vietnamese universities. First, the respondents' ratings (both male and female) are considerably high, which cements the meritorious efforts and consideration of gender equality in Vietnamese universities. Second, the respondents' opinions across their years of study have the least significant differences [Table 6]. Third, the significant difference in 'my university actively works to promote gender equality (P4)' can be attributed to the respondent's level of knowledge about the university system on gender equality, especially the year-one students [Tables 6, 7] and university level [Tables 8, 9]. These results also indicate the possibility of different university approaches to managing gender equality, which may differ from other institutions [56].

Recommendations and Managerial Implications

The study investigated measures to ensure gender equality in Vietnamese higher institutions using the opinions of students at both undergraduate and postgraduate levels. The analysis shows that the rating of female respondents on most of the variables exceeds that of males, indicating the fairness and effort in Vietnamese higher education regarding gender equality. However, the results in Table 5 show that females still witness gender discrimination among students and staff (E6). Therefore, it is recommended that university management continually enforce a gender equality policy for a better learning environment for female students and staff. The effectiveness of the gender equality policy formulated in the institution can be investigated through in-house data collection by the university management to better channel solutions to enhance gender-related issues where necessary. The university staff should be trained in the importance of gender inclusiveness and its impact on various outcome metrics of the institution. The male staff members could be deliberately involved in the training to understand better the global stand of gender equality and a shift from the traditional patriarchal culture in Vietnam and other developing nations. The university management could also fund gender equality training and encourage research efforts. In addition, the gender equality stand of Vietnamese universities should be continuously made known to female and male students in orientation programmes, open-day ceremonies and other official functions of higher institutions.

The analysis results also show that the significant difference in the study hovers around the submission of first-year students to other senior students. This implies the need for the university management to provide a gender-equitable environment for new university entrants. This can help female students be mentally prepared to focus on their studies without fear or prejudice from other students or staff. In addition, it may be essential to provide a unique counselling centre addressing gender-related issues in the university, anonymously or in person. The university can also lead by example by ensuring female staff are allowed in leadership roles and recognised when they make significant achievements in a chosen field. The presence of women in formal meetings can also be duly acknowledged and allowed, and opening remarks can be given, as studies have proved that words of affirmation are essential for women [57-66]. Organising female-centred programmes for staff and students can also be crucial, where influential women in various sectors and industries are invited to speak. This can motivate female students and staff and help address any bias toward females in the working environment.

Theoretical implications

The study contributes theoretically to the literature on gender equality, which is fundamental to Sustainable Development Goal 5. The survey of both males and females in this study provides useful findings to indicate the perceptions of concerted efforts of Vietnamese higher institutions for gender equality in an academic environment. Drawing on the survey participants' ratings and the comparison of various groups of respondents, the findings enrich the theoretical framework of gender equality that is fundamental to women's academic performance, empowerment, and transition from higher education to employment in a developing economy. The findings of this study can be useful for educational institutions, non-governmental organisations, guardians, parents, academic staff, and citizens of Vietnam in understanding the importance of gender inclusiveness.

Conclusion and Future Studies

The study investigated the mitigative measures of maintaining gender equality in Vietnamese universities by surveying male and female students. The constructs of data received hovering around curriculum and teaching practices, institutional policies and culture and personal experience and perspective were analysed using various statistical analyses, namely mean score, standard deviation, Mann-Whitney U test, Kruskal-Wallis H test, and post hoc test. The analysis results revealed no significant difference in the opinions of the male and female respondents on the 28 variables used to investigate the measures of ensuring gender equality in Vietnamese universities. However, divergent views were shown in the respondents' opinions across their years of study, with the first-year students being held as such with different views. Several practical recommendations and implications were provided based on the study's findings. The university is encouraged to lead by example by advocating for women's participation in decision-making and leadership roles. The orientation programme for first-year students should emphasise the university's gender-inclusive stand for the students and staff.

Although this study achieved the intended objectives through the various descriptive and inferential statistics, some limitations were encountered. First, the data from some universities with smaller sample sizes may contribute to the results of this study, although it satisfied the central limit theorem. Therefore, more data may be collected from other universities in other regions to compare it with the results obtained in this study. Staff opinions on the variables used in this study can also be obtained and compared with the findings. The relationships between the three constructs used in this study and outcomes, such as economic and societal metrics, can be evaluated using structural equation modelling in future studies. In future work, other dimensions of measure that may not be considered in this study can be explored through qualitative research methods such as interviews and focus groups.

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