

GENDER GAP IN ACADEMIC PERFORMANCE OF UPM STUDENTS

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Introduction

Gender gap is a phenomenon when the male and female are not in equal performance or distribution in population, academic performance and other socioeconomic achievements. Descriptive statistics will prove the existence of gender gap, and this is usually an indicator of gender related issues in all disciplines in the future. Male and female are physical sexual identities of an individual, and this physical identity cannot be changed 100% even through operation procedures. How the individual male and female believe, behave and think are shaped by the sociocultural and the society of where they live, and this is called gender ideology. Man and woman reflect to gender identity as to how male and female believe she or he should behave as requested by the sociocultural and the society where he or she belong to.

When an individual portrays an action which is significantly different by sex, he/she is trying to show gender identity. For example, a male individual may put on male clothing and a female may put on female dress. The fashion or style of dressing is determined by society's expectation of how male and female should dress up. Then, as gender identity, male is man and female is woman. To gain efficient and effective gender ideology in order for males and females to play equal and equate gender roles in their day to day life, the society needs proper gender related education, awareness, values and socialization. Apparently, unlike sexual identity, gender identity can be changed. Thus, an individual may face gender identity conflict, for example, when a male feels and believes that he should instead behave like a female in the society.

A total number of 122,306 male students (36.9%) and 209,104 female students (63.1%) had enrolled in Malaysia Public Institutions of Higher Learning (IPTA) in 2013 (Ministry of Educational Malaysia, 2014). Based on these gender gap statistics, it may reflect a high potential of females working

as professionals and hold decision making positions in an organization's management team in the future (Lim, 1998).

Currently, gender gap in academic performance at university level is more inclined towards female than their male counterpart. Female are increasingly well educated in many countries, for example in western countries over 50 percent of graduates were female, and in UK more than 54 percent of the postgraduates were female (Patel, 2013). In many countries, though there are more males and no gender gap in primary and secondary schools enrolment, many females have tertiary academic qualification. Except for India, Pakistan and South Africa where female enrolment in universities is at a lower rate as compared to male, because females are still fighting for equal education rights which may be due to socioeconomic hardship of the country and the gender ideology of the society (OECD, 2015; Ibrahim, Zumilah, & Laily, 2013; Patel, 2013; UNESCO, 2012).

This current scenario of gender gap in Malaysian universities will soon produce a gender gap in the professional sector, as well as other gender gap related problems especially due to late marriage, dual career family, the wife having a higher income and better job position than the husband, and glass ceiling issues. Universiti Putra Malaysia (UPM), with an average student population of 30,000, was taken as the background of this paper in order to measure gender gap in academic performance among university students. Thus, this paper aims to answer a research question: 'What is the gender gap of academic performance in UPM?'

Literature Review

Freud's Theory of Femininity (1933)

Gender also refers to masculine for male and feminine for female. This concept is used to describe the difference between male and female. According to Rhode (1997), masculine traits are strength, courage, independent, competitiveness, ambition and aggression, and feminine traits are emotional, sensitive, patience, caution, nurturance, passivity, and dependent. Obviously femininity and masculinity refers to different sets of attitudes, roles, norms of behaviour, hierarchy of values of the male and female, and the expectation from the society to males and females respectively (Il'inykh, 2012; Spence 1985; Freud, 1933). It can be concluded that male and female have different characteristics and may affect their academic performance through different styles of learning and capacity of understanding.

Gender identity is controlled by both individually and the society and usually beyond the control of individuals. Gender is linked to historical, cultural and political setting, and developed into a strong ideology in any society. Somehow or rather the ideology is similar throughout centuries and continents. In fact, the two divisions of gender into man and woman are putting one in the power position and the other into subjugation (Ibrahim *et al.*, 2013).

According to Hofstede (2001), femininity stands for the society in which social gender roles overlap. Both men and women are supposed to be modest, tender, and concerned with the quality of life. The feminine tend to be more relationship-oriented whereas the masculine are more ego-oriented. Feminine are also concerned about the quality of life and towards people who they think are important for her life, while masculine thinks about money, power and things that are important in his life.

Due to the masculine gender roles, society always perceived man to have higher intellectual quotient (IQ) than woman, so that he may achieve higher academic achievement than his woman counterpart. This paper aims to investigate gender gap of academic performance among university students. In some cases, academic performance relates to the types of courses taken by the students, and in other cases it relates to the IQ gap between male and female students.

Apparently, many scholars agreed that female students have better study skills than male students, which may assist them to get high grades in CGPA than the male students (Meltem & Serap, 2004; Tinklin, Coxford, Frame, & Ducklin, 2000). Gender gap may exist in many different areas of education especially academic performance because male and female have different levels of knowledge and IQ (Ismail, 2008). Another perspective according to Ibrahim *et al.* (2013), and Romano (1994), though women usually lead in academic performance but they are always facing socioeconomic hardship such as poverty, low conceptual awareness, low socio-cultural status, and sexual harassment. In other words, glass ceiling issues (barrier of gender ideology of the society to woman) for professional females remained although they are successful economically and professionally.

According to Mohamad Noorman and Zaki (2014) academic performance refers to how students deal with their studies, and how they cope to accomplish different tasks. The performance is usually measured in Cumulative Grade Points Average (CGPA). The CGPA is the cumulative average of grade points achieved by the students for all subjects. There are several reasons underlined by scholars to explain gender gap indicators in academic performance:

1. Different IQ level (Ismail, 2008).
2. Different styles of learning and styles of communication, such as females prefer to read and doing homework; while male prefers experiential learning and lab work (Romano, 1994).
3. Females can study longer hours than males because females have developed the skills to focus from an early age than male by doing household chores.
4. Participation styles in classes.
5. Self-esteem – usually for female students, once they are interrupted by others they will stay out from the discussion. For male students, they will usually keep on talking until they had finished what they wanted to share. Thus, with many females’ teachers, female students may perform better than male students.

Methodology

Two out of 16 faculties in UPM were selected through random sampling - Faculty of Medicine and Health Science (FMHS) and Faculty of Food Science and Technology (FFST). All full time students during Semester 1 2015/2016 (September 2015), male and female regardless of their year of study in these two faculties were taken as population ($N=1644$ students), which comprises of 657 students (40%) from FFST and 987 students (60%) from FMHS. From this population (N), the sample size (n) was confirmed based on Table of Krejcie and Morgan (1970) which is 315 respondents (n). Then, the detailed number of sampling was following Stratified Random Sampling (SRS) procedures - the sample size (n) is divided into 126 respondents (40%) from FFST, and 189 respondents (60%) from FMHS. Table 1 and Figure 1 show the detail distributions - 26 male (20%) and 100 female (80%) respondents from FFST, and 37 male (20%) and 152 female (80%) respondents from FMHS. Thus, the total sample by sex are 63 male (20%) and 252 female (80%) respondents. The 20:80 percentage ratio of male: female ratio is from UPM gender gap statistic in both sampled faculties.

Table 1: Population (N) and Sampling (n)

Sample of faculties	Male respondents	Female respondents
Faculty of Medicine and Health Science	37	152
Faculty of Food Science and Technology	26	100
Number of respondents	63	252

Note:

- 1) Faculty of Medicine and Health Science have 987 students consists 191 male students and 796 female students.

- 2) Faculty of Food Science and Technology have 657 students consists 89 male students and 568 female students.

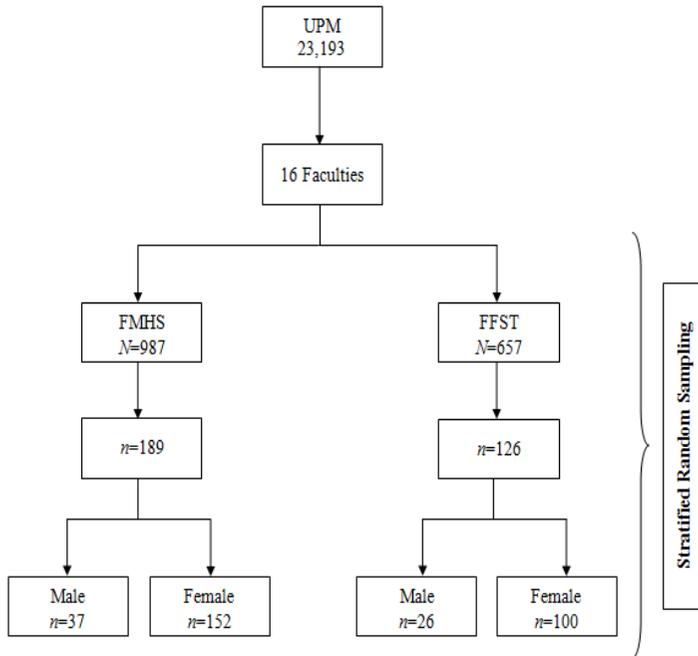


Figure 1: Population and Sample of Study

Note:

$n=315$ respondents for the population $N=1,644$, using Table of Krejcie and Morgan (1970)

This paper only used Part A (Respondents' Background) in Final Year Research Project questionnaire. Section A, respondent's backgrounds, consists of 10 questions about age, sex, race, state of origin, strata of residence, CGPA, and number of current semester of study. This paper used two variables - sex and CGPA. The academic performance which is measured by CGPA is the Dependent Variable (DV) in this paper, and variable sex is the Independent Variable (IV). Sex refers to male or female respondents in dichotomous variable with female=1. The null hypothesis is (H_0). There was no significant difference in academic performance between male and female respondents.

Data was collected through 315 set of questionnaires in January to March 2016, which was distributed in FMHS and FFST. SPSS was used to analyse the data. Descriptive statistics through mean, median, variance, and standard deviation were used to explain the findings on the data. The demographic characteristics like age, race, and strata of residence were presented by sex

disaggregated. The T-test was used to explain the different between male and female in academic performance.

Findings

The findings in this paper start with the profile of the respondents, which is then followed by the gender difference in CGPA scores. Table 3 and Table 4 illustrate the profiles of respondents according to age, gender, race, strata, faculties, and number of current semesters of study. Data for this study was obtained from 315 respondents who are students from FFST and FMHS.

Profile of respondents

From the 315 of data collected (100% returned), 189 respondents (60%) were from FMHS and 126 respondents (40%) were from FFST according to SRS procedure. In detail, 252 (80%) were females, while 63 (20%) were males. Table 2 shows that the respondents mean age=20.76 years old, (SD=1.20 years old). The minimum age of the respondents during the data collection was 19 years old and the maximum age was 26 years old. According to Li, Jiang, An Shen, and Jin (2009), Gen Y between the ages of 18 to 26 years old are usually still studying. The respondents in this paper were Malays in majority, making up (n=247, 78.4%), while 46 (14.6%) were Chinese respondents, 13 (4.1%) were Indian and other races made up 9 (2.9%) respondents in this paper.

Table 2: Age and CGPA Score

Variables	Mean	Standard Deviation	Minimum	Maximum
Age (years)	20.76	1.195	19	26
CGPA	3.39	0.35	2.40	4.00

There were 88 (27.9%) respondents from the Central Region, 95 (30.1%) from the Northern Region, 60 (19.1%) from the East Coast Region, 59 (18.7%) from the Southern Region, and 13 (4.2%) respondents from East Malaysia (Sabah and Sarawak). The high number of respondents from the Central Region may be due to the location of UPM, which is in Selangor. The majority of respondents (n=206, 65.4%) were in their second semester of study, with 57 (18.1%) respondents in fourth semester, and the rest of respondents in various semesters (Table 3).

Table 3: Profiles of Respondents

Variables	Frequency (n = 315)		Percentage (%)	
Race				
Malay	247		78.4	
Chinese	46		14.6	
Indian	13		4.1	
Other	9		2.9	
Gender				
Male	63		20	
Female	252		80	
State of origin				
Central Region	88		27.9	
East Malaysia (Sabah and Sarawak)	13		4.2	
Southern Region	59		18.7	
East Coast Region	60		19.1	
Northern Region	95		30.1	
Strata of residence				
Rural	158		50.2	
Urban	157		49.8	
Faculty	Male	Female	Male	Female
Faculty of Food Science and Technology	26	100	20	80
Faculty of Medicine and Health Science	37	152	20	80
Number of Current Semester				
1	29		9.2	
2	206		65.4	
3	3		1.0	
4	57		18.1	
Others	20		6.3	

Gender gap of CGPA scores

The CGPA was reported at mean=3.39 (SD=0.35). The minimum CGPA of the respondents during data collection was 2.40 and the maximum CGPA was 4.00 (Table 2.0). According to Azizi *et al.* (2006), there is no choice but to grow intellectual and creative citizens through good and quality education with high values. These characteristics can be reflected through high academic performance, which may assist individuals to convey high skills, continuously learning, be creative and has critical thinking capacity to produce good work (Lim, 1998). Entrepreneurship development significantly showed high academic background as development indicator (Zumilah, 2010). The finding of this paper shows significant difference ($p<0.05$) of CGPA between male and female respondents. The female had higher CGPA

than male respondents. The mean CGPA of male respondents=2.66 (SD=1.06) and mean CGPA of female respondents=3.29 (SD=0.65) (Table 4).

Table 4: Independent T-Test Table for Academic Performance among Male and Female Respondents

Variable	Academic performance (CGPA)				
	<i>n</i>	mean	Standard deviation	<i>t</i>	Sig.(2-tailed)
Gender	-5.901				0.000
Male	63	2.66	1.06		
female	252	3.29	0.65		

The findings in this paper show that male respondents had lower mean CGPA than female. This result is supported by Heather and Michael (2012), Meltem and Serap (2004) and Tinklin, Coxford, Frame and Ducklin (2000) which explained female students have better study skills than males. Other studies found that male students used more learning strategies than female students did (Hong-Nam & Leavell, 2006), which in this paper, may either be due to the learning strategies of male respondents who are not working to achieve good results in their academic performance, or the academic syllabus being unsuitable to male students. Early research into language learning strategies was mostly concerned on the strategies that learners used, to address the links between strategy used and success of learning process (Wenden, 1987).

The success and achievement of the individual is closely related to his or her background, their attitude and motivation (Crow & Crow, 1983) towards something. This was especially true when it comes to different language skills. Females were often found to have an advantage in communication skills (Cole, 1997) especially in reading, speaking, writing, and general verbal ability (Hyde & Linn, 1988). Since many academic evaluation methods at university level needs speaking skills, this may give more credit to female than male students.

Another finding obtained demonstrated that the gender gap may exist in many different areas of education especially academic performance, because males and females have difference levels of knowledge and capacity of memory, and usually females have higher IQ than males (Ismail, 2008). According to Bandura (1986), in Social Cognitive Theory (SCT) there are three factors that may influence individual cognitive performance - personal factors (cognitive, affective and biological events); behaviour patterns (gender-linked activities); and environmental events (refers to the broad network of social influences that are encountered in everyday life). Due to

the patriarchal influence in the Malaysian community, female gender roles such as household chores start earlier in the female individual life than male, and this may promote better cognitive ability of females than males. In addition, there is a so called bigger life risk of females than males as perceived by Malaysian females by socializing their daughters rather than sons in gaining knowledge for life survival. For example, daughters are usually reminded by their mother as well as family members to study hard in order to get good occupation and earn money herself for financial security in the future. This advice is due to post-marital risk for women such divorce, having irresponsible husbands, home violence and at the same time she may has many dependents.

Nevertheless, the $SD=1.06$ shows a small range between the highest and the lowest CGPA scores among males, but among female students the range is bigger ($SD=0.65$). According to Romano (1994), many studies have shown that male and female students tend to have different learning styles and different patterns of communication. Due to the small number of SD, there are some females showing low CGPA which may reflect a different approach and learning styles even among females themselves. Further study is essential to identify the best method and learning strategies for male and female students, in order to obtain good CGPA score.

Conclusion

This paper aims to measure gender gap in academic performance among UPM students, and to answer a research question of ‘What is the gender gap in academic performance at university level?’. Two faculties were randomly selected - Faculty of Medicine and Health Science (FMHS) and Faculty of Food Science and Technology (FFST). A number of 315 completed questionnaires were returned and analysed. The data comprise of 26 male (20%) and 100 female (80%) respondents from FFST, and 37 male (20%) and 152 female (80%) respondents from FMHS. The CGPA score and sex of respondents were taken as dependent variable and independent variable respectively. The profiles show high number of Malays (78.45) with a mean age of 20.76 years old.

The findings show significant difference ($p \leq 0.05$) of CGPA score between male and female respondents, with high CGPA score among female (Mean=3.29, $SD=0.65$) than male (Mean=2.66, $SD=1.06$). Therefore H_0 is rejected, and there is significant difference of CGPA score among male and female respondents. There is a narrow gap between the highest and lowest CGPA among males ($SD=1.06$) but wide gap among females ($SD=0.65$).

These reflect that the overall performance of males is on average score, while there is a wide range of CGPA score among females.

The findings may contribute to policy and programme implication to assist males in enhancing his academic achievement through gender sensitive programme especially in learning strategies, as well as to assist female students who had low CGPA scores in order to narrow down the range of CGPA score between the highest and the lowest. Gender sensitive policies related to academic achievement of male and females' students should be addressed properly for the equal wellbeing of male and females in the future.

References

Azizi Yahaya, Jaafar Sidek Latif, Shahrin Hashim, & Yusuf Boon. (2006). *Psikologi Sosial Alam Remaja*. Selangor: PTS Professional Publishing.

Bandura, A. (1986). *Social foundations of Thought and Action: A Social Cognitive*. Englewood Cliffs, NJ: Prentice-Hall.

Cole, N.S. (1997). *The ETS Gender Study: How Females and Males Perform in Educational Setting*. Princeton, NJ: Educational Testing Service. Pg. 32

Crow, L.D. & Crow, A. (1983). *Psikologi Pendidikan Untuk Perguruan*. Kuala Lumpur: Dewan Bahasa dan Pustaka.

Dayioglu, M. & Turut-Asik, S. (2004). Gender differences in academic performance in a large public university in Turkey. *ERC Working Papers in Economic 04/17*.

Faten Bazlin Binti Abdul Kadir. (2015). Relationship between English Speaking Proficiency Performance and Sex among Final Year Students in Faculty of Human Ecology, Universiti Putra Malaysia. *Unpublished final year project report*.

Freud, S. (1933). *New Introductory Lectures On Psycho-Analysis. The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XXII (1932-1936): New Introductory Lectures on Psycho-Analysis and Other Works, 1-182*.

Hofstede, G.H. & Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage.

Hon-Nam, K. & Leavell, A. (2006). *Language Learning Strategy Use of ESL Students: Human Behaviour*. New York: Plenum.

Hyde, J. & Linn, M. (1988). Gender differences in verbal ability: a meta-analysis. *Psychological Bulletin*, 104(1), 53-69.

Ibrahim Abdullahi, Zumilah Zainalaludin, & Laily Paim. (2013). Empowering rural girls through education: way of reducing vulnerability and improving family economic wellbeing in rural Northern Nigeria. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 18(1), 57-61.

Ismail, M., & Ibrahim, M. (2008). Barriers to career progression faced by women: evidence from a Malaysian multinational oil company. *Gender in Management: An International Journal*, 23(1), 51-66.

Krejcie, R.V. & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.

Lim, A.L. (1998). Perceived Parenting Styles and Academic Achievement of Selected Malaysian Form Four Students. *Unpublished Ph.D Thesis*, Universiti Malaya.

Ministry of Educational Malaysia. (2014). *National Education Statistic: Higher Education Sector 2013*. Perpustakaan Negara Malaysia.

Mohamad Noorman Masrek & Nurul Zaki Mohd Zainol. (2014). The relationship between knowledge conversion abilities and academic performance. *Procedia Social and Behavioral Science*, 174, 3603-3610.

Norehan S. (2016). Relationship between Spending Patterns and Academic Performance among Male and Females Students in Universiti Putra Malaysia. *Unpublished final year project report*.

OECD. (2015) *Education at a Glance: OECD Indicators*.

Patel, G. (2013). Gender Differences in Leadership Styles and the Impact Within Corporate Board. *Commonwealth Secretariat Report*.

Rhode, D.L. (1997). The ideology and biology of gender difference. *The Southern Journal of Philosophy*, 35(1), 73-98.

Romano, R. (1994). Gender issues in teaching: does nurturing academic success in women mean rethinking some of what we do in the classroom? *Stanford University Newsletter on Teaching*, 6(1), 6p.

Tinklin, T., Croxford. L. Frame.B., & Ducklin. A. (2000). Gender and Pupil Performance in Scotland.Paper. The European Conference on Educational

Research, Edinburgh. Available online: <http://www.leeds.ac.uk/educol/documents/00001663.htm> topic on task performance in tape-mediated assessment of speaking. Language typology. Prentice/Hall International, Englewood Cliffs, NJ, pp. 15–30.

UNESCO. (2012). *World Atlas of Gender Equality in Education*. UNESCO Publishing. Retrieved from <http://www.uis.unesco.org>

Wenden, A. (1987). *How to be a Successful Language Learner: Insights and Prescriptions from L2 Learners*. Retrieved from www.ncela.us/rcd/bibliography/BE019930

Wharton, G. (2000). Language learning strategy use of bilingual foreign language. *Language Learning*, 50(2), 203-243.

Zumilah, Z. (2010). Kemahiran pengurusan perniagaan yang lahir daripada latarbelakang akademik dan pengalaman bekerja usahawan luar bandar di Malaysia. *Man and Society*. 19, 134-152