

Influence of Occupational Stereotyping on Enrolment in Technical Courses: A Case of Female Students in Technical Training Institutions in North Rift Region, Kenya

* Rotich Reuben¹, WanyekiPaul² and Dimo Hebert¹

¹University of Eldoret, P.O. Box 1125, Eldoret

²Dedan Kimathi University of Technology, P.O. Box 657, Nyeri

*Corresponding Author's Email Address:rotich166@gmail.com

Abstract

Technical and Vocational Education and Training (TVET) has been championed as an avenue that to better standards of living since it empowers individuals to become economically productive and thus escape poverty and marginalization. However, the number of female students enrolled in TVET courses persistently remains low and sometimes declining. Therefore, gender inequalities due to these challenges make the focus of this research, which seeks to find out the influence occupational stereotyping has on enrolment of female students in technical courses in TVET institutions in North Rift Region, Kenya. The research design used for this study was the descriptive survey and the target population of the study consisted of 224 female students registered in the five TVET institutions in North Rift Region. Census technique was used because the target population was small and thus a manageable number. Data was collected by use of questionnaire that was administered to the sampled students and the internal consistency was computed by Cronbach alpha and yielded a coefficient of 0.861. Data was analysed using descriptive statistical statistics with the help of the computer software Statistical Package for the Social Sciences (SPSS) version 20. The study indicated that enrolment of female students in technical courses was influenced by; career counsellors at KCSE level, KCSE grades and gender stereotypes. However, the respondents were ambivalent that their choice of technical courses was based on global technological advancements.

Keywords: Technical and Vocational Education and Training, Occupational stereotyping, female students

INTRODUCTION

Technical and Vocational Education and Training (TVET) has been championed as an avenue to better standards of living since it empowers individuals to become economically productive and thus escape poverty and marginalization. When individuals are equipped with suitable competencies, they become entrepreneurs, employable and informed citizens thereby contributing to economic development of a nation (Anaele, Isiorhovoja, Dele & Asoluka, 2014). Accordingly, TVET is essential in human resource development through expansion of employment opportunities and enhancement of socio-economic inclusion. It is estimated that women comprise slightly over 50% of the world's population. In addition, they represent two thirds of the world workers, but, they ironically, earn one tenth of the world's income and own only one hundredth of property (Adelakun, Oviawe, & Barfa, 2015). These inequalities can be linked to unequal access to training opportunities. For instance, a study conducted in Nigeria found out that female participation in TVET and Science, Engineering and Technology (SET) show that females are grossly underrepresented and occupy the middle and lower status, in spite of the recent steady progression from such status over time (Udeani, & Ejikeme, 2011). This is affirmed by another study conducted by Adelakun, Oviawe and Barfa (2015) which revealed that a large number of women were mainly engaged in poorly paid jobs and while several others are victims of early marriages,

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sex work and child labour. Further still, a study by United Nations Educational, Scientific and Cultural Organization, UNESCO (2010) concurs with the same view and adds that in TVET, male students outnumber the female students in 91 per cent of countries globally, despite increased parity in enrolment in higher education and in Science Technology Engineering and Mathematics disciplines. Moreover, in the developed world, countries such as the United Kingdom experience low rates of female participation in STEM related subjects and occupational choice (National Academies Press, 2007). This gap is attributed to gender bias in the curriculum, classroom pedagogy and failure by the system of education to offer support for development of self-esteem, confidence and aspiration of female learners at the formative stage (Johnsen & Kendrick, 2005). Female underrepresentation in TVET is therefore an issue both in developed and developing countries, Kenya included. Despite progress made over the years, many gaps, barriers and inequalities still persist, hence making this research critical in analyzing factors influencing enrolment of female students in technical courses in Technical Training Institutions in North Rift Region.

Kenya recognizes the role of education and training in contributing to the Gross Domestic Product (GDP) with particular emphasis on TIVET (Republic of Kenya, 2003). The subsector has been identified as one that will be able to spur economic development within the next 13 years and help achieve Vision 2030. To this end, research should focus on the level of female enrolment in technical courses in TVET institutions in Kenya. Importantly, TVET is the foundation of any sustainable technological development (Medugu & Bappah, 2013). It helps in human capital development of any nation and it is regarded as workforce kind of education that facilitates the adjustment of the skills and knowledge to the changing demands of society. TVET is essential to the world of work as it is an effective means of empowering the society to engage in productive and sustainable livelihoods (Simiyu, 2009). Recently, Kenya revitalized the subsector in order to locate herself strategically in the international scene (Republic of Kenya, 2012). Notably, this may not be achieved while women are lagging behind their counterparts in technical courses and fields.

Provision of TVET education in Kenya takes place in different levels of technical training institutions including Youth Polytechnic (YPs), National Youth Service (NYS), The Kenya Technical Teachers College (KTTC), Institutes of Technology (IT), and Technical Training Institutes (TTIs) and in some universities (Republic of Kenya, 2005). Some of the challenges facing the TVET sector in Kenya according to Sessional Paper No. 14 of 2012 include an insufficient number of trainers with pedagogical competency and inadequate number of TVET centres. Other challenges include poor geographical distribution of TVET institutions, negative perception of TVET among the high school students and the general Kenyan population and low enrolment of females in SET courses. There is also lack of policies on gender mainstreaming as pointed out during the national workshop organized by the Ministry of Higher Education, Science and Technology in May 2008 (UNESCO-NCST Report, 2010). The National Commission for Science, Innovation and Technology (NACSTI) (2010) further emphasizes on the need for such policies since they promote empowerment, equal and full participation of women in science, technology and innovation activities. Further, the same report noted that underutilization and underdevelopment of women's capability in science and technology can be traced from their poor performance and participation in Science, Mathematics and Technology Subjects right from primary education level which is influenced by culture and attitude. In addition, the report also points out that women have been outperformed by men in TVET (UNESCO-NCST Report, 2010). Therefore, this study addresses possible reasons and solutions to this persistent low participation of female students in Technical courses in Technical Training Institutions in Kenya.

The main aim of TVET sector policies is to provide for quality and inclusive participation in TVET, especially for disadvantaged groups which include learners with disabilities, rural populations and marginalized groups. However, improving gender equality in TVET programmes is still riddled with many challenges. The solution to this as noted in Republic of Kenya (2012) is to enhance participation of women in TVET and gender mainstreaming through policies such as affirmative action. Other recommendations made by (UNESCO-NCST, 2010) include flexible work arrangements and lobbying for scholarships for female students and staff who wish to pursue studies or training in science and technology. UNESCO also recommended the establishment of gender focal points and non-discrimination policies in the work place, equality, institutional strengthening and training in science and development of gender indicators. However, despite the proposed recommendations, low female participation still existed by 2015.

In the North Rift Region of Kenya, the total TVET enrolment by gender indicates that the percentage of female students' participation in TVET has been steadily declining from 2010-2014 (Kenya Economic Survey, 2015). Table 1 provides a summary of the enrolment.

Table 1: Enrolments by Gender in TVET Institutions in the North Region (2010-2014)

	2010	2011	2012	2013	2014
Male	50.78%	52.66%	60.50%	59.49%	60.59%
Female	49.22%	47.34%	39.5%	40.51%	39.41%

Data presented in Table 1 shows that the proportion of female students as compared to their male counterparts has remained low in TVET institutions in the North Rift Region from 2010 to 2014. These statistics underscore the question why female students taking TVET courses persistently remains low. Therefore, gender inequalities due to various challenges make the focus of this research pertinent, which seeks to find out the influence occupational stereotyping on enrolment in technical courses among female students in technical training institutions in North Rift Region, Kenya.

METHODOLOGY

The research design used for this study was the descriptive survey. This study utilized a cross –sectional method based on a sample drawn from five selected technical training institutions. The target population of the study consisted of 224 female students registered in the five TVET institutions in North Rift Region, who were distributed as follows; Rift Valley Technical Training Institute Eldoret (65); Kaiboi Technical Training Institute (51); Kitale Technical Training Institute (65); Baringo Technical Training Institute (7) and Ol'lessos Technical Training Institute (36). The study used the census technique because the target population was small and thus a manageable number. Consequently, all the female students enrolled in the TVET institutions in the North Rift region were included in the study. Data was collected by use of a questionnaire that was administered to the sampled students through hand delivery. The questionnaire consisted of five items in a five point likert scale, ranging from, strongly disagree (1), disagree (2), undecided (3), agree (4) and strongly agree (5). The instrument was piloted in Rift Valley Institute of Science and Technology (RVIST) using a sample survey of 57 female students. Data from the pilot survey was used to compute the internal consistency using Cronbach alpha and yield a coefficient of 0.861, thus indicating the instrument was reliable. Data was analyzed using

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descriptive statistics with the help of the computer software Statistical Package for the Social Sciences (SPSS) version 20. A total of 224 questionnaires were distributed and 220 of them were duly filled and returned thus making a return rate of 98%.

RESULTS AND DISCUSSIONS

The study sought to establish the influence of occupational stereotyping and outcome expectation on enrolment of female students in technical courses in technical training institutions in North Rift Region. The influence of occupational stereotyping and outcome expectation on enrolment of female students was measured by means of four items that sort to find out the influence of; career counselors at KCSE level, limitations due to KCSE grades, limitations due to gender stereotype and global technological advancements.

a) Influence of Counsellors at KCSE Level on Enrollment in Technical Courses

The study sought to find out whether career counsellors at KCSE level had the influenced the respondents decision to enroll in technical courses. The responses are provided in Figure 1.

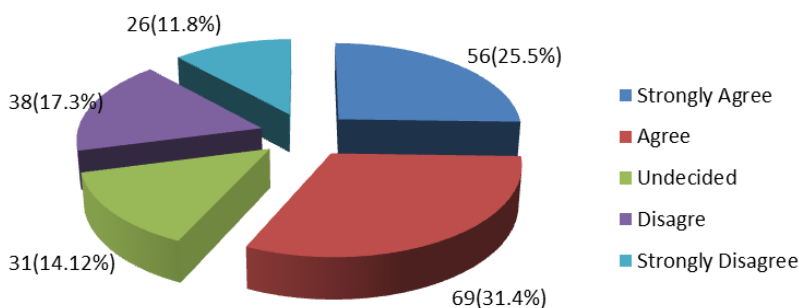


Figure 1: Influence of Counselors at KCSE Level on Enrollment in Technical Courses

Analyzed data provided in Figure 1 shows that majority, 69(31.4%) of the respondents agreed that career counselors at KCSE level had the greatest influence in the course enrollment in technical courses. This was followed by 56(25.5%) who strongly agreed, 38(17.5%) disagreed, 31(14.12%) were undecided and 26(11.80%) who strongly disagreed. These findings indicated that generally, majority of the respondents agreed that career counsellors at KCSE level had influenced their enrollment in technical courses. The government has appointed a counsellor in each and every secondary school in the country, who is charged with the responsibility of providing students with vocational guidance as well as providing them with psychological and social support. The counselors have among other aspects been instrumental in clearing the myth that science subjects which are a prerequisite of joining technical courses is purely a domain of male students and improve the female students uptake of science and mathematics.

This agrees with Moletsen and Reddy (2011) who posit that school counselors have with limited success embarked on psychosocial re-construction that has defined technical courses as a masculine domain and this begins in secondary school level, before making of career choices. Hence female students are taught to think that they can become engineers despite the ways in which boys and girls are treated in the society, whereby girls are expected to be more accomplished in linguistic and social skills, and boys are supposed to be better at

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mathematical, mechanical and other problem-solving tasks as pointed out by (Minton & Schneider, in Nguyen, 2000). Such perceptions are also being countered by having role models and encouraging more females to enroll in these fields. There is also need for teachers to be supportive and encouraging to those female students in technical related fields. This is because women can particularly bring a different dimension, qualities and skills to engineering, yet at the same time contributing to economic development, an aspect that needs attention.

b) Enrollment in Technical Courses Limited by KCSE Grades

The study sought the respondents’ opinion as to whether the limited by KCSE grades in enrollment in technical courses. The findings are summarized in Figure 2.

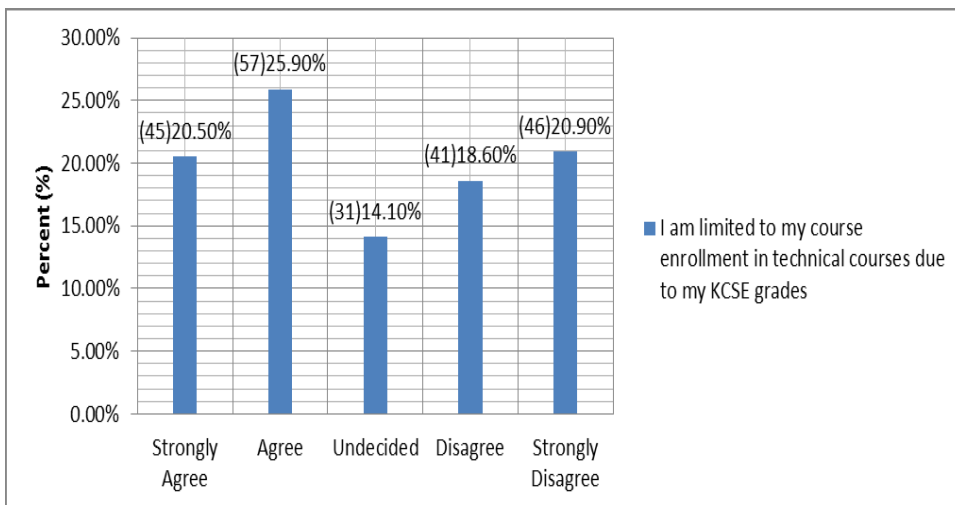


Figure 2: Enrollment in Technical Courses Limited by KCSE Grades

Data presented in Figure 2 clearly shows that majority, 57(25.90%) of the respondents agreed that KCSE grades limited their enrollment in technical courses; 46(20.90%) strongly disagreed, 40(20.5%) strongly agreed, 41(18.60%) disagreed and 31(14.10%) were undecided. These responses show that majority of the students agreed that their enrollment in technical courses was limited by their KCSE grades. According to Ayonmike (2014), factors affecting female participation in TVET were governmental, school, societal, and parental. Future salary expectations; employment chances; availability of instructional materials and well-equipped workshops; past performance of science learners; social-economic factors and; family members influenced female enrollment in science-oriented courses (Wataka, 2013). Retention of female learners in TVET institutions is a key component of comprehensive enrollment management programme and improving quality of learners’ life, and a continuing priority for all institutions of higher education (Noel, 2014). Addressing student retention via learning, teaching and curricular developments meets needs of all learners, including the disadvantaged. For equity and diversity legislation, requirement for institutions in UK is to make anticipatory changes, which advance success of all learners. In Australia, mandate is for specialized provision of tailored support for under-represented or disadvantaged groups of learners (Crosling, Heagley & Thomas, 2009).

c) Enrollment in Technical Courses Limited by Gender Stereotypes

The research investigated whether the female students' was limited by gender stereotypes. The findings are presented on Figure 3.

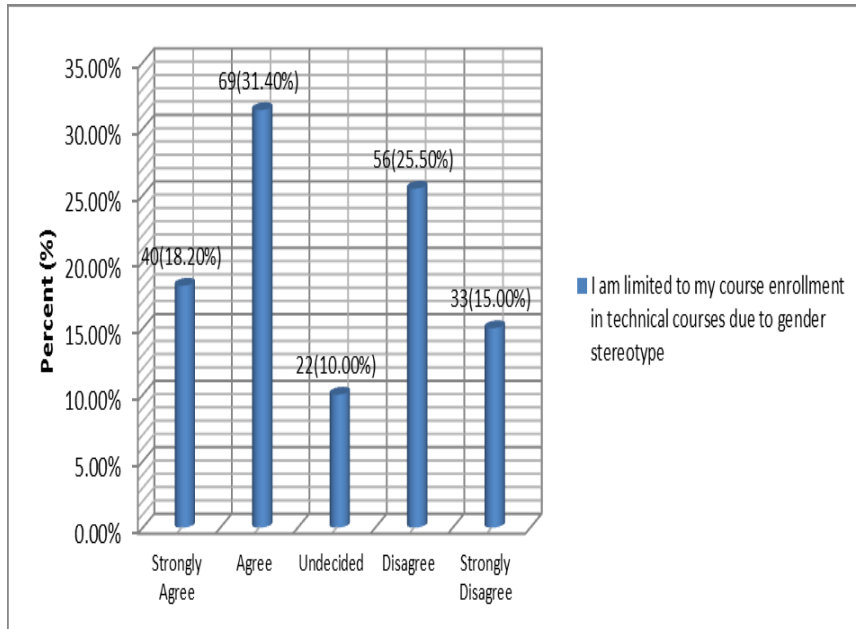


Figure 3: Enrollment in Technical Courses Limited by Gender Stereotypes

Figure 3, illustrates that majority, 69(31.40%) of the respondents agreed that their enrollment in technical courses they were limited by gender stereotypes. 56(25.5%) disagreed, 40(18.20%) strongly agreed, 33(15.00%) strongly disagreed and 22(10.00%) were undecided. Thus, majority of the respondents agreed that gender stereotypes were a limitation to female students' enrollment in technical courses. There are numerous social and cultural stereotypes that influence the choices of female students' choice toward venturing in STEM related fields. UNESCO-UNEVOC (2010) concurs that such factors have been identified as one major cause behind the lower proportion of women in STEM fields. These gender stereotypes, especially those that are biased against women, can therefore greatly limit female students' opportunities to access and enroll in technical courses. This is in agreement with the World Bank (2012), who observed that gender stereotypes, especially with regard to the perceived role of women as caregivers, can impact their chosen fields of study and careers. For instance, the higher rate of women choosing to pursue professions such as teaching may be due to the perception that such professions allow more flexibility to balance family and work responsibilities. Some of the proposed strategies are, decentralized and non-respective educational planning, expanded programme of non-formal, lowtech vocational training for rural girls, gender sensitive planning, gender inclusive curriculum and gender exclusive educational and vocational guidance and counselling services for girls and their parents, periodic upgradation of syllabi and instructional materials and creation of gender sensitive support structure for working women.

d) Choice of Technical Courses Based on Global Technological Advancements

The survey sought to find out if the respondents' career choice in technical courses was based on global technological advancements. The results are provided in Figure 4.

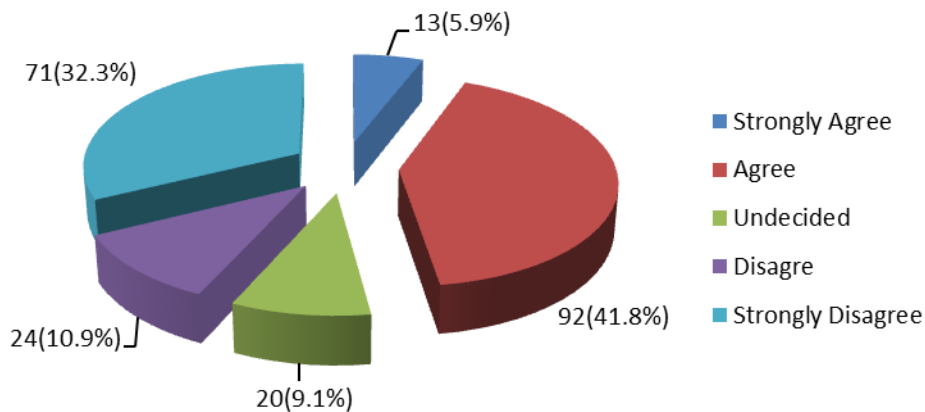


Figure 4: Choice of Technical Courses Based on Global Technological Advancements

Analyzed data provided in Figure 4, revealed that majority 92(41.8%) of the respondents agreed that their choice of technical courses was based on global technological advancements. 71(32.3%) strongly disagreed, 24(10.9%) disagreed, 20(9.1%) were undecided and 13(5.9%) strongly agreed. The advent of modern technology along-with proper education and communication has given sufficient space to every woman to live her aspiration and dreams like never before. These results show that majority of the respondents were ambivalent that their choice of technical courses was based on global technological advancements. Some of the major challenges that we face in the 21st century with regard to ensuring equal access of girls and women to TVET are, increasing the participation of girls' especially rural girls in TVET and removing the gender bias in TVE from educational planning, parents, society and employers. Besides, facilitating employment for girls is also a major challenge. In order to be able to meet these challenges, it is imperative that specific strategies are adopted keeping in view the cultural, geographical and ecological variations as also problems relating to poverty and ignorance.

CONCLUSION

The study established that the choice of female students in technical courses was not strongly based on global technological advancements. However, it was found out that enrollment of female students in technical courses was limited by KCSE grades and career counselors at KCSE level were found to influence female students' enrollment in technical courses. Lastly, it was revealed that gender stereotypes were a limitation to female students' enrollment in technical courses.

RECOMMENDATIONS

From the findings of the study it can be recommended that there is need to sensitize the female students on the on global technological advancements that can provide them with opportunities for self-improvement in TVET. The government should formulate programmes that will make TVET attractive to female learners, such as enrollment at lower

entry grades for female students wishing to pursue a career in technical courses and teacher counsellors in secondary schools should continue with their career guidance programmes. Lastly, gender stereotypes pertaining to female students' enrollment in technical courses should be addressed through community education programmes.

REFERENCES

- Adelakun, O., Oviawe, J., & Barfa, G. (2015). Strategies for enhancing Female participation in Technical Vocational Education and Training. *Advances in Sociological Science Research Journal*, 2(4). Doi:10.14738/assrj.24.1041.
- Anaele, E. O. Isiorhovoja, O.; Dele, A. & Asoluka, C. O. (2014). Strategies for Enhancing female participation in Apprenticeship in Technical Occupations. *Indian Journal of Applied Research* 4, 2, 27-30
- Ayonmike, C. S. (2014). *Factors Affecting Female Participation in Technical Education Programmes*. [http://jehdnet.com/journals/jehd/3\(3\)_September_2014/18.pdf](http://jehdnet.com/journals/jehd/3(3)_September_2014/18.pdf)
- Medugu, J., & Abubakar, B. (2013). Employers' Perception of the Role of Technical Vocational Education and Training in Sustainable Development in Nigeria. *Vocational and Technology Education Programme, Yola*. Retrieved on 11th November, 2014 from Page org. scholar.google.com vocational technical education.
- Johnsen, S. K. & Kendrick, J. (2005). *Teaching gifted students with disabilities*. Waco, TX, US: Prufrock Press
- Minton, H. L. & Schneider, F. W. (2000). *Differential Psychology*. Monterey, CA: Brooks/Cole
- Molsetsen, R. & Reddy V. (2011). *Women's Participation in Industrial Science, Engineering and Technology*. Human Science Research Council.
- Noel, K. (2014). Competitive Strategies in Higher Education: Case of Universities in Malawi. *The International Journal of Social Sciences and Humanities Invention*, 1(7), 490-499
- Republic of Kenya, (2012). *Ministry of education and ministry of higher education, science and technology. Sessional paper no 14 of 2012 on reforming education and training sectors in Kenya*. Nairobi: Government printer.
- Simiyu, J. (2009). Revitalizing a technical training institute in Kenya. A case study of Kaiboi technical training institute, Eldoret, Kenya. *Case studies of tvet in selected countries*.
- UNESCO-UNEVOC. (2014). International centre for technical and vocational education and training. Retrieved on 11th October 2019, from http://www.unevoc.unesco.org/fileadmin/user_upload/docs/CS1SIMIYUformatte_final.pdf
- Udeani, U. & Ejikeme, C. (2011). A decade into the 21st Century: Nigerian Women Scientists and Engineers highly Under-represented in Academia. *The African Symposium*, 11(2)99-105.
- UNESCO. (2010). Women's and Girls' Access to and Participation in Science and Technology Paris: UNESCO. <http://www.uis.unesco.org/ScienceTechnology/Documents/unesco-egm-science-tech-gender-2010-en.pdf> (Accessed 30 July, 2019)
- UNESCO & NCST. (2010). Mainstreaming gender in science and technology policies and programs in Kenya. Nairobi-Kenya: NCST
- UNESCO-UNEVOC (2010). Case Studies of TVET in selected Countries. Improving the participation of Female Students in TVET Programmes Formerly Dominated by Males: The Experience of Selected Colleges and Technical Schools in the Philippines.
- Wataka, J. S. (2013). *Factors Influencing Enrollment Of Female Students In Science Oriented Courses In Technical Training Institutions In Bungoma County: Kenya*. University of Nairobi.
- World Bank (2012). *Toward Gender Equality in East Asia and the Pacific. A companion to the World Development* (2014). Report on Washington DC: World Bank. http://siteresources.worldbank.org/EASTASIAPACIFICEXT/Resources/2263001339798342386/eapgender_full_conference.Pdf (Accessed 5 Nov, 2019).