

# Factors Influencing Students' Selection of Home Science in Public Secondary Schools

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## Abstract

Home Science as a subject has been given emphasis in the Kenya's Basic Education Curriculum Framework as one of the core subjects in Junior School. However, fewer students selected Home Science as an optional subject in the previous education system. This study sought to investigate the relationship between perceived determinants of subject selection and students' selection of Home Science in public secondary schools. The study investigated relationship between gender related students' perceptions and students' attitudes on students' selection of Home Science subject. The study adopted a descriptive survey research design. The sample size comprised of 144 students who had selected Home Science and 124 who had not selected the subject in form three. Further, all the eight Home Science teachers and five principals of the sampled schools were purposefully sampled as key informants. Data from students was collected using a questionnaire. Interview guides were used to collect data from Home Science teachers and principals. Data were analyzed using descriptive, inferential statistics and content analysis. Results of the study revealed a statistically significant relationship between students' gender related perceptions of Home Science subjects election [ $\chi^2(2, n = 263) = 12.501, p = .002$ ]. Students' attitude towards Home Science also influenced Home Science subject selection [ $\chi^2(2, n = 263) = 6.121, p = .047$ ]. From the findings, the study recommends sensitizing learners, educators and community members about the importance of Home Science as a technical subject and to demystify gender stereotypes on the subject.

**Key Words:** Gender related perceptions and Attitude towards Home Science.

## 1.1 Background to the Study

Home Science is an applied science subject that is taught in secondary schools in Kenya. It is a multidisciplinary field that involves the application of scientific principles to the management of home and family. Home Science as a technical and applied subject is expected to provide secondary education graduates with prevocational skills that are relevant to day to day life and in the hospitality industry (Nyangara et al., 2013; RoK, 2003). Some of the topics covered in the subject include nutrition, clothing, housing, family relationships, and child development. It is therefore a technical subject aligned to the hospitality industry and day to day home keeping duties. In the African society, home keeping is a women's gender role and hence male students do not develop keen interest in the subject. Consequently, fewer boys than girls enroll for the subject. However, the subject is meant for both male and female students (KICD, 2017).

George (2013), observe that students' interest in Home Science tend to be low compared to other subjects. The same trend has been reported in studies in New Zealand, Australia, United Kingdom and Nigeria. In these countries, the low selection of Home Science by students was attributed to lack of role models, lack of adequate training resources and high cost of education resources for teaching the subject (Bolstad & Hipkins, 2015; Vaidya, 2015). Home Science being a technical subject practical subject applies experiential learning approaches in authentic environments hence the high cost of education resources.

Lyons (2015) and Cleaves (2015) indicate that teachers wield some motivation over students' choices to select Home Science subject since they provided career information. This assertion underscores the importance of mentors in selection of Home Science subject. The low number of students selecting Home

Science could be associated with limited number of role models at community and school to mentor students and demystify the gender stereotyping of Home Science. Meighan (2009) observes that there were few career guidance instructors qualified to provide career guidance to students at secondary school level.

Positive attitude by learners is associated with increased interest and enjoyment of technical subjects (Miller et al., 2009). Student mentorship in Home Science should therefore target spurring interest towards the subject. Learners should be exposed to the value of Home Science subject including learning experiences that expose learners to authentic skills for application in health education, food and nutrition, home management, costume and fashion design, culinary arts among others (Kenya Institute of Curriculum Development [KICD], 2017;).

Despite the annual exponential growth in students' enrolment in secondary school in Kenya, the number of students selecting Home Science has remained an all-time low. According to a report by the Kenya National Examination Council (2020), the proportion of candidates selecting Home Science compared to other subject in three subsequent years (2017, 2018, and 2019) was 9.0%, 8.9%, and 8.6% respectively. The same trend was observed from data on subject selection in secondary schools in Kakamega County between the year 2016 to 2020. Research studies on educational and career expectations by students in public secondary schools in Kenya revealed that teachers did not adequately prepare students for career opportunities related to Home Science (Obonyo, 2011). Existing gender related stereotypes and negative attitude towards Home Science may have been contributing to the low students' enrollment in the subject.

Home Science as a technical subject is expected to equip Kenyan youths with employability skills in the hospitality industries and alleviate unemployment rate in Kenya. However, the number of students selecting the subject at secondary school level is an impediment to achievement of this goal. Hence it is imperative that factors affecting selection of Home Science subject are studied and understood for mitigation with the ultimate aim of increasing students' positive perception of the subject which is now a core subject in the new Competency Based Curriculum (CBC) in Kenya. The findings of this study may help teachers and education stake holders in developing strategies and policies to demystify gender stereotypes in Home Science among students. Teachers and educators may further apply the findings of this study to foster positive attitude towards Home Science which would translate into increased student enrollment in the subject.

## **1.2 Statement of the Problem**

Technical and applied subjects like Home Science are pursued for their perceived benefits in equipping learners with practical skills and competencies and in the long run make a contribution in reducing unemployment in Kenya. To this end, Home Science is expected to equip students with skills and competencies that forms the foundation for pursuing careers in health education, foods and nutrition, home management, costume and fashion design or culinary arts amongst others. Studying Home Science at secondary school level opens opportunity for students to pursue training in these careers at tertiary level. Despite the accrued career benefits associated with studying Home Science subject, the national enrollment rate for Home Science subject at secondary level has been low compared to other subjects. It is however not known why the enrollment remained an all-time low. This study therefore investigates how gender related perceptions and students' attitude towards Home Science influenced students' selection of Home Science subject.

## **1.3 Research Questions**

This study was guided by the following research questions:

- i. Do students' gender related perceptions towards Home Science relate to students' selection of Home Science subject?
- ii. Is there a relationship between students' attitude towards Home Science and students' selection of Home Science subject?

## 2.0 Literature Review

The study reviewed literature on gender and students' attitude towards Home Science and how they influence the selection of the subject. The theoretical framework for the study is also provided.

### 2.1 Gender and Home Science Education

Gender stereotype is a generalized view or preconception about attributes or characteristics, or the roles that are or ought to be possessed by, or performed by, women and men. A gender stereotype is harmful when it limits women's and men's capacity to develop their personal abilities, pursue their professional careers and/or make choices about their lives (<https://www.ohchr.org/en/women/gender-stereotyping>). Gender stereotypes in Home Science education can be conceptualized from sociology, psychology, and feminism viewpoints (Mullally, 2013). Under this viewpoints, Fiske (2015) concludes that peoples' culture and the meanings they attach to social experience and relations provides context for such meanings. The social system is a product of the meanings given to it by its members. Hence, gender stereotypes associated with Home Science are a construction of people through their culture passed on from one generation to another.

Tovey and Share (2013), have linked schools to the establishment of gender norms, and the unequal socialization of girls and boys. Schools have been seen as formal institutions of socialization through the school curricula that could be used to shape learner's understanding of gender roles. To this end, gender perceptions that Home Science is a subject for the female gender is a social construct that if not checked and demystified may end up confining young women for a life of domestic servitude. It may also deny male students an opportunity to thrive in related careers as well life outside their parents' care and supervision. However, gender stereotypes in Home Science are socially constructed beliefs which are bound to change in the advent of a more convincing gender-neutral philosophy. School curricula should therefore be devoid of gender stereotypes that present Home Science as a feminine subject.

Gender stereotypes that diminish the role of Home Science in creating a just and equal society still persist in both developed and developing countries with the misconceptions being more pronounced in developing countries. In Norway, Home Economics has been a core subject since 1959 when reforms were introduced aimed at promoting gender equality. However, the focus of the subject has narrowed to Food and Health in order to meet health-related social challenges that have become more urgent than gender equality. This has resulted to reduced number of hours allocated to the subject, lean budget and low status of Food and Health as compared to other subjects. In Japan, Home Economics has experienced diminished support in terms of hours, budget and prestige. In both Norway and Japan, a high percentage of Home Economics teachers are women, and the percentage of students studying Home Economics education at universities is also overwhelmingly female. The image that Home Economics in Japan is an activity for women has not been completely eradicated (Branlat & Sano, 2021). In Hong Kong, Erjavsek (2021) points out that Home Economics contents are mainly intended for girls and not boys. Due to prevailing negative attitudes of teachers, parents, peers and patriarchal community, boys chose not to attend Home Economics classes.

In Ghana, boys in junior high school avoid Home Economics since they have been socialized to believe that the subject involve mostly feminine activities. Girls tend to select Home Economics because they of the perceptions that the subject involve the use of little physical strength in most practical activities, such as cooking, laundry and sewing, compared to other subjects. In this way, learners align themselves to the beliefs of society, perpetuating existing inequalities in career choices (Janhonen-Abruquah et al., 2017). In Namibia, Home Economics is perceived as a subject for girls. Male students opt for Design and Technology as they view it as a subject meant for males. Boys who choose Home Economics are teased and mocked by fellow male learners (Enkali, 2019). Such misconceptions which appear engrained in the society and the education system limits the children's ability to learn, develop talents and succeed in Home Economics related careers.

### 2.2 Students' Attitude towards Home Science

Chelagat et al. (2019) rightfully argue that students enroll in learning institutions with a desire and enthusiasm to learn. A learner with a sincere interest and zeal in a given subject has an internal self-drive and is more likely to respond to external motivation because they already have a positive attitude towards learning. Students' negative attitude towards a subject is a key predictor that indeed, the learning process will not facilitate the acquisition of the desired skills and competencies. According to Serem (2011), attitudes are feelings for or against a something or an individual in terms of likes and dislikes. It has been

observed that students tend to avoid subjects that they dislike especially if the subject is optional in the school curricula and select the subject if they like it even if it was optional. Students are capable of developing either a positive or negative attitude toward a subject.

A study by Kaberia (2020) in Kenya concluded that students selected Geography as an optional subject because of its relevance to career aspirations. Attitude was also a major factor on whether students chose to pursue geography or not. Tsikati (2019) research on factors influencing subject selection among prospective teachers concluded that impressions and attitude towards subjects played a key role. Oriahi et al. (2010) observe that fewer students tended to take Home Science even if it was available for students to select. According to Serem (2011) there were some topics in Home Science that students found to be more appealing such as foods and nutrition, home management, clothing and textiles. Students felt that the knowledge acquired from these topics is transferable to their day to day life. Therefore, if Home Science is presented as a subject whose benefits goes beyond the classroom, it would be one of the ways of increasing learners interest in the subject. Muthui (2009) reported that inadequate resources for teaching Home Science and limited training for Home Science teachers worked against learners' interest in the subject. Students will not take chance studying Home Science if their instructors are not qualified.

Sempele (2019) study among Home Science tutors in Primary Teacher Training Colleges in Kenya found that the tutors were concerned about the negative attitude that the society has towards Home Science education besides considering it as a subject meant only for female students. The tutors felt that attitude towards Home Science by the society affected trainees' choice to pursue the subject in Primary Teacher Education. However, a study by Chelagat et al. (2019) in Elgeyo Marakwet County in Kenya found that students had positive attitude towards Home Science education in secondary schools which could be attributed to the interest depicted by the students in the practicals and the usefulness of the subject in equipping them with life skills. The study concluded that students' attitude towards Home Science had nothing to do with enrolment. It is therefore important that the discussion is extended to other localities so as to explore the effect of students' attitude towards Home Science on optional enrolment in the subject

### **2.3 Theoretical Framework**

The study was anchored on Bronfenbrenner's ecological systems theory which advances that the process of human development, including perceptions and attitude that shape our career choices, is shaped by complex interactions between an individual and their environment. The theory argues that children development takes place in a networked ecological model comprising of the microsystem, mesosystem, exosystem, macrosystem and chronosystem. The child is placed at the center of the center of the networked systems (Tudge et al., 2017). The microsystem is described as a pattern of activities, roles, and interpersonal relations experienced by the developing person in each setting with particular physical and material characteristics. Home and school are considered microsystems because they are among the closest relationships with a student. The microsystem has a very big impact on the decision of a student in choosing subjects and careers. For instance, absence of strong role models on Home Science as compared to strong female role models at home will perpetuate gender gaps in selection of the subject (Stacy, 2021; Zaatari & Maalouf, 2022).

The mesosystem describes the interaction of the various elements of the microsystems with one another, which also impacts on the development of the child. Developmental processes occurring in different settings are likely to affect one another. For example, inter-relations among parents, teachers and peers are likely to affect students' perceptions and attitudes that influence choice of subjects and related careers. During the early years of schooling, students' progress in career exploration, attitudes and stereotypes are influenced by their parents and teachers through role modeling, nurturing preferences, identifying possible career pathways and shaping perceptions towards work (Taveira et al., 2016). It is expected that students learn gender stereotypes and acquire like or dislike for Home Science based on their interactions with significant others in the various microsystems. A home environment where housekeeping activities, cooking among other chores are predominantly performed by females will inculcate beliefs among both boys and girls that Home Science is a feminine subject. Such beliefs and attitudes are likely to be extended to the school setting as a student interacts with each other (Tudge et al., 2017).

The exosystem includes those environmental conditions that are external to the child, but impact the child's development including career paths and subject choices in an indirect way. Key actors in the exosystem include the extended family, neighbors, friends of the family, media, industry, and any other broader social,

political, and economic conditions that influence the way the microsystems impact the child (Tudge et al., 2017). For example, the industry, prompted by need for competitive advantage, may stimulate the need for some careers. The mass media may talk positively about Home Science and portray it as a subject that has utility for both male and female students. Local politics may give support to students pursuing courses related to Home Science that stimulating demand for the subject. Neighbours may act as role models and indirectly influence students' career preferences thus shaping students' attitude and perceptions towards Home Science (Khaoya, 2015). The macrosystem describes the culture in which individuals live. Inherent in one's culture are assumptions, beliefs, and practices that have become socially acceptable over time (Tudge et al., 2017). Cultural values and attitudes perpetuating gender inequalities have persisted in African communities including in formal education due to prescriptions on roles that are appropriate for males and females. Cultural roles of females as caregivers and managers of home affairs influence students' choices for particular careers. For instance, females choose careers such as home management, catering, home economics, food and nutrition, and tailoring. Boys yearn for subjects with a potential for sciences, entrepreneurship, and mathematics (Ampaire et al., 2021; Janhonen-Abuquah et al., 2017).

The chronosystem is concerned with changes in individuals and their surroundings resulting from significant life events or experiences (Duan et al., 2023). Significant events of particular importance to this study is the global push towards eliminating gender inequalities in the society including in careers. Home Science has also been included as a core subject in the Competency Based Curriculum framework in Kenya. Learners have no choice but to be part of the subject which has been under siege due to existing misconceptions. Consequently, there is need for more attention to Home Science Education including determining factors that influence students' choice of the subject with the ultimate aim of mitigating factors within the systems that adversely affect students' preference for the subject over other subjects. Bronfenbrenner's Ecological systems theory therefore provides a sound theoretical basis for investigating students' gender related perceptions and attitude towards Home Science in relation to students' selection of Home Science subject. It is expected that students' perceptions and attitude acquired over time from the various networked systems will be reflected in their decision as to whether or not to pursue Home Science subject.

### **3.1 Research Methodology**

The study applied descriptive survey research design. Descriptive research aims to learn as much as possible about the current state of a phenomenon and, if possible, extrapolate meaningful inferences from the data collected. The study was conducted in Mumias Sub-County within Kakamega County. Mumias Sub County was chosen because it is the Sub-County with the least number of students taking Home Science subject at secondary school level and also given the fact that the number of students taking Home Science has consistently remained low since the year 2012 (Kakamega County Director of Education, 2017). The study key respondents for the study were form three students since subject selection is done at the end of form two. The students therefore provided data on the various determinants of students' selection of Home Science since they had already made their choice to continue or drop out of the subject. The target population of the study therefore comprised all the 761 form three students who had already selected their subjects in the five (5) schools offering Home Science subject in Mumias Sub-County. There were eight (8) Home Science teachers in the schools.

Due to the small number of schools offering Home Science, all the five (5) schools participated in the study. According to Mugenda and Mugenda (2012), a sample size of 10-30.0% is good enough if well-chosen and the elements in the sample are more than 30. However, due to the small number of students taking Home Science in the five schools, all the 144 students were purposefully sampled. The researcher identified the students with the help of the Home Science teachers. The study used 124 (20.0%) of the students who did not chose Home Science. Proportionate random sampling was used to determine the number of students who had not selected Home Science. All the eight (8) Home Science teachers and five (5) principals of the schools offering Home Science participated in the study as the key informants.

A questionnaire was used to obtain data from the learners. Interview guidelines were used to obtain information from the Home Science teachers and principals. To ensure face and content validity, two (2) experts from the Department of Curriculum, Instruction and Educational Management of Maasai Mara University appraised the instruments. Before the actual data collection, a pilot study was conducted in two (2) schools in Kakamega Central Sub-County. Kakamega Central Sub-County was chosen since it is outside the study area and was not part of the final study so as not to cause pre-exposure effect. A sample of 25 form

three students taking Home Science and 25 students who did not chose the subject participated in the pilot study. The computed Cronbach's Alpha coefficient for the scaled items in the students' questionnaire was 0.82 and above the minimum acceptable index of .700. The reliability of the questionnaire was therefore considered adequate. The questionnaire collected nominal data on students' attitude and students' gender related perceptions in relation to selection of Home Science. Chi-Square test of independence ( $\chi^2$ ) was used to test the relationship between students' attitude, gender perceptions and selection of Home Science subject. Kothari (2014) asserts that Chi-Square is used to measure the relationship between categorical and nominal data. Hence the chi-squared test is appropriate when you want to determine whether there is a significant association between two categorical variables. The interview schedules collected qualitative data on students' attitude and gender related perceptions. Content analysis was used to analyze the data from the key informants. Statistical Package for the Social Sciences (SPSS) version 28.0 for windows aided in quantitative data analysis.

#### **4.0 Results and Discussion**

The section presents and discusses the results of the study in line with the research questions. The research questions were as follows: Do students' gender related perceptions towards Home Science relate to students' selection of Home Science subject? Is there a relationship between students' attitude towards Home Science and students' selection of Home Science subject?

##### **4.1 Response Rate**

The study targeted a sample of 268 primary respondents of 144 students taking Home Science and 124 students who were not taking Home Science in public secondary schools in Mumias Sub-County. Data from the students were collected using a questionnaire. In addition, five (5) secondary school principals and eight (8) Home Science teachers participated in the study as key informants. Out of 268 questionnaires administered to the students, 263 questionnaires were returned and found useful for analysis. This gave the study a response rate of 98.13% which was considered sufficient for further analysis.

##### **4.2 Students' Gender Related Perception and Selection of Home Science Subject**

The first research question of the study was to determine whether students' gender related perceptions towards Home Science related to students' selection of Home Science subject. Before resolving the question, the study examined students' gender related perceptions about Home Science. the findings are presented in the following section.

###### **4.2.1 Students' Gender Related Perceptions towards Home Science**

Students' gender related perceptions towards Home Science were measured using a five-point Likert and Likert type scale where: 1= strongly disagree (SD), 2 = disagree (D), 3= not sure (NS), 4 = agree (A) and 5 = strongly agree (SA). The frequency and percent of student's ratings of each response were computed. The cumulative frequency and percent of the students who disagreed (both SD and D) and agreed (both A and SA) for each of the items in the scale was determined in order to establish the overall pattern of the responses. The composite mean of all the items in the scale was computed to determine the overall students' gender related perceptions towards Home Science.

Results summarized on Table 1 revealed that the majority 158 (57.4%) of the students disagreed with the statement that Home Science is all about cooking and sewing. The finding implies that majority of the students believed that there was more to learn in Home Science other than cooking and sewing which reflects a positive perception towards Home Science. The students were therefore aware that Home Science also facilitates the acquisition of other essential competencies. The finding is contrary to persistent public perceptions that associate Home Science with learning to cook and sew (Deagon, 2021). According to Arfi and Kiran (2015), sewing and cooking are only a small component of Home Science. Students study other broad areas such as consumer education, institutional management, interior design, home furnishing, cleaning, handicrafts, clothing and textiles, commercial nutrition, food preservation, hygiene, child development, managing finances and family relationships. Competencies acquired in Home Science subject are applicable in a wide variety of manufacturing and service industries and are crucial to help the country realize its goals towards industrialization and improved wellbeing in the households.

**Table 1: Students' Gender Related Perceptions towards Home Science**

Statement	Rating: Frequency and Percent					Cumulative		
	SD	D	NS	A	SA	D	A	Total
Home Science is all about cooking and sewing	83 31.6%	75 28.5%	24 9.1%	49 18.6%	32 12.7%	158 57.4%	81 31.3%	263 100.0%
Home Science subject is mostly regarded as a female subject	27 10.7%	32 12.2%	14 5.3%	101 38.4%	89 33.8%	59 22.9%	190 72.2%	263 100.0%
Boys are discouraged from taking Home Science Subject	54 20.5%	65 24.7%	31 11.8%	61 23.2%	52 19.8%	119 45.2%	113 43.0%	263 100.0%
The society regards Home Science subject activities as feminine	51 19.4%	40 15.2%	16 6.1%	81 30.8%	75 28.5%	91 34.6%	156 63.1%	263 100.0%
Boys should enroll in more challenging subjects like engineering, commerce and accounting.	70 26.6%	77 29.3%	23 8.8%	45 17.1%	48 18.3%	147 55.9%	93 35.4%	263 100.0%
<b>Mean (M) =3.34; Standard Deviation (SD) = 0.49</b>								

**Source: Field Data (2022)**

The study also found that the majority 190 (72.2%) of the students agreed that Home Science was regarded as a female subject. Further, the study found that most 156 (63.1%) of the students were of the view that the society regarded Home Science subject activities as feminine. There was therefore a possibility that this perception was harbored by some male students and therefore affected their decision to select Home Science. The findings also suggest that gender stereotypes about Home Science can be traced back to the community where students come from. Ampaire et al. (2021) observe that cultural norms around gender influenced students' perceptions and choice of Home Science in secondary schools. Consequently, learners align themselves to the beliefs of society, perpetuating existing inequalities in access and participation in Home Science education (Janhonen-Abruquah et al., 2017). This implies that policy interventions to increase number of students selecting Home Science subjects in school should also target to change societal negative perceptions towards Home Science. Gender stereotypes that depict females and males in dissimilar social roles and role-related activities, and connect them to their education and career pathways, may influence the future career decisions of students.

As to whether boys were discouraged from taking Home Science, the study found that an almost similar proportion of the students agreed 113 (43.0%) while 119 (45.2%) disagreed that male students were discouraged from taking Home Science subject. Furthermore, on whether boys should enroll in more challenging subjects like engineering, commerce and accounting, a high proportion 147 (55.9%) of the students disagreed with the statement a reasonable proportion (35.4%) concurring with the statement. These results should not be overlooked since they allude that there were efforts to actively propagate the stereotype that Home Science was a feminine and less challenging subject for males. After discussing items measuring students' gender related perceptions towards Home Science subject, the study proceeded to classify the perceptions as either negative, neutral or positive. The mean score for all the items measuring gender related perceptions was computed for each student where 1.0 was the possible lowest score and 5.0 the possible highest score. A mean score of 1.0 – 2.49 was considered as negative gender perceptions, a mean score of

2.50 – 3.49 was considered neutral and a score of 3.50 to 5.0 was classified as positive gender perception. The results of the analysis were as summarized on Table 2.

**Table 2: Classification of Students' Gender Related Perceptions towards Home Science**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Negative	114	43.3	43.3	43.3
	Neutral	22	8.4	8.4	51.7
	Positive	127	48.3	48.3	100.0
	Total	263	100.0	100.0	

Results summarized on Table 2 revealed that a proportion 127(48.3%) of the students had positive gender perceptions implying that they were not largely influenced by gender stereotypes towards Home Science. However, an almost similar portion 115(43.65%) had negative gender perceptions implying that they were largely influenced by gender stereotypes in the selection of Home Science subject. In order to corroborate the results from the quantitative analysis on students' data, the study analyzed and discussed the qualitative data related to gender perceptions on the selection of Home Science subject. The data were collected from five (5) principals of schools offering Home Science and eight (8) Home Science teachers. During interviews with Home Science teachers and principals, the respondents were asked how they would explain the fact that most of the students taking Home Science were female. From Home Science teachers' perspective, most students were female because most boys look down on the subject and perceive it to be feminine and this position was taken by 6 (75.0%) of the teachers and 4 (80.0%) of the principals interviewed. Teachers and principals were asked if they felt that boys are discouraged more than girls from taking Home Science subject at school, home and the society in general. Majority of the key informants indicated that there was discouragement to boys as regards to pursuing Home Science. This view was taken by 5 (63.0%) of the teachers and all the 5 principals interviewed.

The key informants were asked if boys were encouraged to enroll in more challenging subjects like engineering, commerce, accounting and not Home Science which was considered an easy subject. From the results, most of the teachers were of the view that people in the community as well as in the schools expected and therefore encouraged boys to take more challenging subjects.

This is what a Home Science teacher had to say;

*In many sections of the community and even in schools and particularly among non-Home Science teachers, boys are discouraged from taking Home Science because they are told that the subject is generally feminine and not challenging at all. Boys are actually encouraged to take on more difficult subjects that guarantee them better employment prospects (Interview transcript from field data).*

This shows that teachers in the schools and members of the community expected boys to pursue other subjects and not Home Science. Asked whether there were adequate number of both male and female teachers as to encourage both male and female students to choose Home Science Subject, majority of the respondents indicated that there were very few male Home Science teachers. From the interviews with the teachers, all the 8 teachers and 4 of the 5 principals indicated that it was very difficult to come across a male Home Science teacher.

This is what a principal had to say;

*One of the reasons why there are gender disparities in the selection of Home Science among Secondary school students with more girls than boys selecting the subject is that boys lack role models among teachers of Home Science. Male Home Science teachers are very rare to come across not only in Mumias Sub-County but in Western region and the County as a whole. This is one of the reasons why male students perceive Home Science as a female subject (Interview transcript from field data).*

The small number of male Home Science teachers denies boys the opportunity to effectively associate themselves with Home Science subject. The findings concur with Kimani (2008) who found that Home Science subject was often looked down upon and teachers expressed disappointment at the manner in which the subject was regarded as feminine hence discouraging male students from selecting it. The study also



observed that most male students fail to study Home Science because the community generally expects them to take on more challenging subjects such as the sciences and business subjects. The following section presents results on the relationship between students' gender perceptions and students' selection of Home Science subject.

#### 4.2.2 Relationship Between Students' Gender Related Perceptions towards Home Science and Students' Selection of Home Science Subject

The study sought to resolve the following research question: Do students' gender related perceptions towards Home Science relate to students' selection of Home Science subject? To resolve the research question, data on students' gender related perceptions towards Home Science (whether positive, neutral or negative) and students' choice of Home Science in form three (yes or no responses) were subjected to Chi-square test. The findings are presented on Table 3.

**Table 3: Chi Square Test Results: Students' Gender Related Perceptions Towards Home Science and Students' Selection of Home Science subject**

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.501 <sup>a</sup>	2	.002
Likelihood Ratio	12.795	2	.002
Linear-by-Linear Association	10.820	1	.001
N of Valid Cases	263		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 4.56.

The data summarized on Table 3 show that students' gender related perceptions towards Home Science and students' selection of Home Science were significantly related  $\chi^2(2, n = 263) = 12.501, p = .002$ . Since  $p < .05$ , it was therefore determined that students' gender related perceptions on Home Science and students' selection of Home Science subject were significantly related. The finding conveys that students' gender related perceptions indeed influenced students' selection of Home Science. Harmful gender stereotypes lead to a decrease in students' enrolment in Home Science subject. Efforts to present to sensitize the students on negative gender perceptions and stereotypes related to Home Science would probably result to improved enrolment in Home Science subjects in public secondary schools in Mumias Sub – County. The findings concur with Kong et. al. (2023) study in China which found that gender stereotypes either from family upbringing or from school upbringing affect adolescents' attitudes and perceptions about career choices. By holding certain gender beliefs, adolescents will think that females are more suitable for studying arts and males are suitable for studying science; on the contrary, females are not good at studying science. The following section presents and discusses results on the second research question.

#### 4.3 Students' Attitude towards Home Science and Students' Selection of Home Science

The second research question of the study investigated the relationship between students' attitude towards Home Science and student's selection of Home Science. Before determining this relationship, the study analyzed students' responses on the various items measuring attitudinal aspects on selection of Home Science. The findings are presented in the following section.

##### 4.3.1 Students' Attitude towards Home Science Subject

Data on students' attitude towards Home Science education were collected on a five-point Likert scale where: 1= strongly disagree (SD), 2 = disagree (D), 3= not sure (NS), 4 = agree (A) and 5 = strongly agree (SA). The frequency and percent of student's ratings of each of the items measuring students' perceptions of attitude aspects in Home Science education were computed. The cumulative frequency and percent of the students who disagreed (both SD and D) and agreed (both A and SA) was determined in order to establish the overall pattern of ratings on each of the items. The composite mean of all the items on the scale was computed to determine the overall students' attitude towards Home Science education.

The results summarized on Table 4 revealed that most 145(55.1%) of the students disagreed with the statement that Home Science was not one of the most important subjects. This implies that most respondents recognized Home Science as one of the most important subjects. Students were therefore aware that Home

Science as a subject could help them to secure employment and make a living out of it. This was a favorable response towards the uptake of Home Science in schools considering the general public perception that Home Science may not be a useful subject after school as pointed out by Maina (2015). It was also found that the majority 175(66.5%) of the students agreed that everybody should have some basic knowledge of Home Science. This shows that most respondents appreciated the relevance of Home Science in the day-to-day life. Majority 153(58.2%) of the students did not agree with the statement that it was easy to study and pass Home Science. The students therefore acknowledged the intellectual demands of pursuing Home Science. This was important in dissuading the notion that Home Science was an easy subject that would be studied and passed by anybody.

On the statement whether Home Science was a very interesting subject, results presented on Table 4 show that the majority 161(61.2%) of the students agreed with the statement. The result implies that students undertaking Home Science find it interesting and enjoy the activities involved in the study of Home Science. It was also evident that the majority 163(62.0%) of the students agreed with the statement that Home Science was more demanding in terms of time and money. This observation is attributable to the practical nature of Home Science where material, tools and equipment are needed which require money to acquire them while the activities consumes time to accomplish them.

**Table4: Students’ Attitude towards Home Science Subject**

Statement	Rating: Frequency and Percent					Cumulative		
	SD	D	NS	A	SA	D	A	Total
Home Science is not one of the most useful subjects	69 26.2%	76 28.9%	20 7.6%	53 20.6%	45 17.1%	145 55.1%	98 37.3%	263 100.0%
Everybody should have some basic Home Science knowledge	42 16.0%	51 19.4%	25 9.5%	86 32.7%	59 22.4%	103 33.5%	175 66.5%	263 100.0%
It is very easy to study and pass Home Science	71 27.0%	82 31.2%	27 10.3%	38 14.5%	45 17.1%	153 58.2%	110 41.8%	263 100.0%
Home Science is a very interesting subject	39 14.8%	63 24.0%	14 5.3%	83 31.6%	64 24.3%	102 38.8%	161 61.2%	263 100.0%
Home Science is demanding in terms of time and money.	47 26.6%	53 29.3%	22 8.8%	80 17.1%	61 18.3%	100 38.0%	163 62.0%	263 100.0%
Generally, people look down on students taking Home Science	66 26.6%	93 29.3%	21 8.8%	58 17.1%	25 18.3%	159 60.5%	83 39.5%	263 100.0%
Home Science is for those who are academically weak	76 28.9%	112 42.6%	26 9.9%	31 11.8%	18 6.4%	188 71.5%	75 28.5%	263 100.0%
Home Science should be scrapped off from the syllabus	63 24.0%	79 30.0%	25 9.5%	50 19.0%	46 17.5%	142 54.0%	121 46.0%	263 100.0%
<b>Mean (M) =3.42; Std. Deviation (SD) = 0.44</b>								

Source: Researcher (2022)

Results summarized on Table 4 also convey that the majority 159(60.5%) of the students disagreed with the statement that students taking Home Science were down looked upon. The research results further revealed majority 188 (71.5%) of the students disagreed with this statement that Home Science was for students who were academically weak. Sigot (2013) assert that teachers and administrators thought the subject was for those students that were incapable of performing well in other subjects and this created the wrong impression among students intending to select Home Science. Hence majority of the students did not harbor the negative attitude that Home Science was for those who are academically weak.

Data summarized on Table 4 also revealed that about 142(54.0%) of the respondents disagreed with the statement that Home Science should be removed from the syllabus. However, a sizeable number 121(46.0%) of the students were in agreement with the statement. This implies that there was still need for schools to create awareness among the students on the benefits associated with studying Home Science.

Upon discussing the items measuring students' attitude towards Home Science, the study proceeded to classify the students' attitude towards Home Science as either positive, neutral or negative. The mean score for all the items measuring attitude for each student was computed where 1.0 was the lowest and 5.0 the highest mean score. A score of 1.0 – 2.49 was considered a negative attitude, a score 2.50– 3.49 was considered neutral and a score of 3.50 – 5.0 was considered a positive attitude. The results summarized on Table 5 show the classification of students' attitude towards Home Science subject.

**Table 5: Classification of Students' Attitude towards Home Science**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Negative	13	4.9	4.9	4.9
	Neutral	102	38.8	38.8	43.7
	Positive	148	56.3	56.3	100.0
	<b>Total</b>	<b>263</b>	<b>100.0</b>	<b>100.0</b>	

Results summarized on Table 5 show that majority 148(56.3%) of the students had a positive attitude towards Home Science subject. A positive attitude towards Home Science may increase students' interest and choice of the subject. The finding concurs with Chelagat et. al. (2019) study in Elgeyo Marakwet County which found that students had a very positive attitude towards Home Science. In order to verify the findings from the students, results obtained from the key informants on the variable were analyzed and discussed. Interviews were done with 8 teachers of Home Science and 5 principals. Respondents were asked to give a general comment on the attitude of their students towards Home Science subject. The key informants were of the opinion that students who were taking Home Science liked the subject and talked well of the subject. The respondents pointed out that the students who had not selected Home Science were generally negative towards the subject and gave lots of reasons why they could not select the subject including the subject being regarded as feminine and not marketable.

The key informants were asked to state the various reasons for the students' negative attitude towards Home Science subject. Majority were of the view that parents, relatives of students, community members, some teachers and peers were behind the students' negative attitude towards Home Science. This is what a school principal had to say;

*In any given year, there are fewer students taking Home Science as compared to other subjects for various reasons. What has come out clearly from most students over the years has been the discouragement from community members and close relatives likes parents, siblings and other significant members of the community. Many people who discourage students from taking Home Science paint the subject as being for women and girls (Interview transcript from field data).*

Teachers and principals were asked whether they would say that other students look down on students taking Home Science. Majority of the respondents were of the view that other students did not openly look down on students who take Home Science. This was said by 7 of the 8 teachers and all the 5 principals. Interviews with teachers and principals sought to establish whether students not taking Home Science felt that it was a subject for those who were academically weak. Majority of the teachers and principals were of the view that students who were not taking Home Science did not generally feel that Home Science was for students who were academically weak and this was stated by all the 8 teachers and 3 of the 5 principals.

This is what a Home Science teacher had to say:

*It is not true to say that students who do not take Home Science consider students who take the subject to be academically weak. In any case, there is always friendship and teamwork among students regardless of the varying subject combinations* (Interview transcript from field data).

Asked whether students viewed Home Science as more demanding in terms of time and money, the teachers and principals revealed that indeed students found Home Science as extremely demanding in terms of time and money given the practical nature of the subject. From the interviews, it also emerged that parents and guardians of students taking Home Science complained of the extra payments that were required by schools to secure materials and equipment for Home Science practical lessons.

This is what a principal had to say;

*To master concepts in Home Science, students are required from time to time to take part in practical lessons, some of which are costly, time consuming and requiring utmost keenness and concentration. This has had the effect of discouraging some students from taking the subject* (Interview transcript from field data).

This shows that the negative attitude towards Home Science, particularly by students who did not take the subject could be due to costs involved in taking the subject. Findings from this study were compared with findings from previous studies on how students' attitude affected selection of Home Science. Another study by Kiptoon (2011) also found that most parents tend to discourage their children from taking subjects that require additional investment of resources and time over above other subjects. Having discussed students' attitude towards Home Science, the study proceeded to determine the relationship between students' attitude towards Home Science education and students' selection of Home Science subject in the schools. The results are presented in the following section.

#### **4.3.2 Relationship Between Students' Attitude towards Home Science and Students' Selection of Home Science Subject**

The study sought to resolve the following research question: Is there a relationship between students' attitude towards Home Science and students' selection of Home Science subject? To resolve this question, data on students' attitude towards Home Science (whether positive, neutral or negative) and students' choice of Home Science in form three (yes or no responses) were subjected to Chi-square test. The findings are presented on Table 6.

**Table6: Chi Square Test Results: Relationship between Students' Attitude towards Home Science and Students' Selection of Home Science subject**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.121 <sup>a</sup>	2	.047
Likelihood Ratio	6.188	2	.045
Linear-by-Linear Association	4.521	1	.033
No. of Valid Cases	263		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.39.			

**Source: Research Data (2022)**

The data summarized on Table 6 show that students' attitude towards Home Science and students' selection of Home Science were significantly related,  $\chi^2(2, n = 263) = 6.121, p = .047$ . Since  $p < .05$ . It was therefore established that there is a significant relationship between students' attitude towards Home Science and students' selection of Home Science. Therefore, we conclude that the two attributes are associated meaning there is a statistical significance. The finding conveys that students' attitude towards Home Science indeed influenced students' selection of Home Science. Positive attitude towards Home Science would probably result to improved enrolment in the subject in public secondary schools in Mumias Sub – County. The implication of this finding is that students who developed a positive attitude towards Home Science are more likely to select the subject while those who developed a negative attitude towards Home Science were less likely to select it. Oriahi et al. (2010) opined that the attitude of students toward the sciences influences their

choice, and with a negative attitude, disinterest develops, causing students to abandon the subject when given the opportunity. They also confirmed the importance of taking steps to change students' perspectives about the sciences. The study findings concur with Chelagat et al. (2019) study in Kenya which found that students' attitude towards Home Science was positively correlated with enrolment in the subject. A deliberate and conscious effort to mitigate factors that contribute to students' negative attitude towards Home Science was more likely to result to increased uptake of the subject.

## 5.0 Conclusions

Arising from the results of the study, the study concluded that both negative and positive gender related perceptions towards Home Science were almost fairly distributed amongst the students with the dispersion more inclined towards the positive. This was encouraging considering that the students with positive gender perceptions towards Home Science may be used as peer mentors for those students who were classified as neutral and those with negative gender related perceptions. Students acknowledged that there were invaluable competencies to learn from Home Science beyond cooking and sewing. However, gender stereotypes that depict Home Science as a feminine subject discouraged male students from enrolling in the subject. In line with Bronfenbrenner's ecological systems theory, it was evident that students align themselves to the dominant beliefs of the society and the alignment inhibits their interests, talent development, personal academic goals and success in Home Science related careers.

The study concluded that students' gender related perceptions was significantly related to student's selection of Home Science subject in public secondary schools. Harmful gender stereotypes adversely affected students' enrolment in Home Science subject. Efforts to sensitize the students on negative gender perceptions and stereotypes related to Home Science would probably result to improved enrolment in Home Science subjects in public secondary schools in Kenya. The study also concluded that students had a positive attitude towards Home Science education. However, extreme demands in terms of resources and time contributed negatively on students' attitude towards Home Science. Students' attitudinal perceptions of Home Science subject played a significant role in determining whether students enrolled in the subject or not. Students who develop a positive attitude towards Home Science are more likely to select the subject while those who developed a negative attitude towards Home Science were less likely to select the subject.

## 1.10 Recommendations

Considering the findings and conclusions of the study, the following recommendations were made;

- i. The learner, teachers and members of the community are core actors in the ecological systems that influence gender stereotypes towards Home Science education. Consequently, the Ministry of Education, industry and media should partner in demystifying perceptions among the core actors that Home Science is a feminine subject and demonstrate its relevance in facilitating the acquisition of employable skills for all learners in the 21<sup>st</sup> Century.
- ii. Although children start gaining early insights on gender stereotypes from the interactions in the home microsystem, schools have a role in managing negative gender stereotypes acquired at home especially in Early Years Education. The Ministry of Education and the Teachers' Service Commission should therefore develop a training module on integration of gender transformative strategies in Early Years Education in order to confront gender stereotypes and biases at the formative stages.
- iii. The Ministry of Education should strengthen the Office of Career Services in schools. This would ensure that career mentorship programmes are entrenched in school's co-curricular activities. It was evident that male students' required exposure to role models, industry players in Home Science related careers and any relevant experiential learning activities that would reinforce positive gender perceptions and attitude towards Home Science Education.
- iv. The Constitution of Kenya requires that every child has a right to quality education. Among the key indicators of quality education is quantity and quality teaching and learning resources including instructional materials. The Ministry of Education should therefore ensure that Home Science Education is fairly resourced as a strategy to mitigate negative attitude towards the subject due to extra demands on resources from the students.
- v. The Ministry of Education should require teacher education programmes to include a component of gender training and gender responsive pedagogy so as to orient preservice teachers to gender issues in the society and school setting.

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