GENDER DIFFERENCES IN CAUSAL ATTRIBUTIONS FOR SUCCESS AND FAILURE IN ACADEMIC ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS

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ABSTRACT
This study investigated the gender differences in causal attributions for success and failure in Kenya. Students may form causal attributions, which may influence their academic achievement either positively or negatively. The study was guided by Weiner's model of Achievement Attribution. The participants were 585 students (315 males, 270 females). The participants completed the Multidimensional Multi-attributional Causality Scale (MMCS). The main findings of the study were that there were significant gender differences in the causal attributions for failure while the differences in causal attributions for success were not significant. The results also indicated there were differences in the causal attributional styles of boys and girls. Taking into account that students can form inappropriate causal attributions that might negatively affected their academic achievement, the study made recommendations to the stakeholders on intervention measures. The researcher also recommended for further research in the area of gender differences in causal attributions for success and failure.

Keywords: Key words: Causal attributions for success, causal attributions for failure, locus of causality, stability, controllability.

1. Introduction

  A strong relationship has been established between causal attributions, and academic achievement (Abiodun & Owoyele, 2011; Solar, 2015). How a student reacts to whether they passed or failed depends upon their causal attributions. Causal attributions are the explanations that students give to explain causes of their academic failure or success. In the education context, Weiner (2005) theoretizes that the student's attributions for their successes or failures can significantly affect their future performance. He argues that success and failure in an academic task is linked to three sets of characteristics. First, the attributions of locus of causality are the students external or internal factors that may come from within themselves or that may be linked to the environment. Secondly,

the attributions of stability are either stable or unstable. When attributions are stable, students may believe that the outcome of their performance will be the same every time they engage in the same task. Unstable attributions imply that the attributions can be altered and therefore the outcome of performance may vary the next time the behaviour is performed. Lastly, the reasons of success or failure may be perceived as either controllable or uncontrollable (controllability). If the factors are perceived as controllable, the students' believe that they can change these causes. According to Weiner (2005), if the learners consider the causes as uncontrollable, it creates a perception that they cannot be easily changed. On the other hand, when learners attribute their academic success to internal, unstable causes, that they can control, they persist on the academic tasks.

2. Gender Differences in Students' Causal Attributions

Several studies were reviewed in an attempt to examine the gender differences in causal attributions for success and failure in academic achievement. Studies on gender differences in causal attributions styles for success and failure show contradictory findings. Some studies found no sex differences in causal attributions in male and female students while in others significant gender differences were reported. Farid (2017) studied causal attribution beliefs of success and failure among secondary school students in Pakistan. Participants of the study included 1826 students. A self-reporting causal attributions beliefs scale was used to collect data. The scale measured eight causal beliefs about success and failure. Results showed that both male and female students endorsed internal attributions as possible reasons of their success as well as failure than external attributes. Previously, Farid (2012) study on causal attributions beliefs in Mathematics and English among Pakistan children using a sample of 396 (224

females) student had also established significant gender differences in their causal attributional pattern.

In China, Mok, Kennedy, and Moore (2011) analyzed the causal interpretations given by secondary school students for academic success and failure. The study investigated how the variables of gender, class level and level of achievement were related to the students' academic attributions. A sample comprising of 325 (165 girls, 160 boys) was used. Data were analyzed using multivariate analysis of variance. Significant gender differences were found in causal interpretations for school performance for students with similar cultural backgrounds. Females explained their academic failure in terms of their lack of ability and strategy use than males. Females also ascribed their academic success to strategy use or effort while male attributed success to ability. The study findings were that males and females in all class levels persistently attributed effort as the most significant cause for academic outcomes.

Genet (2014) study among Ethiopians examined causal attributions by college-age students regarding their academic achievement. A descriptive survey design was employed. The total sample was 104 second year university students. Academic success was attributed to internal factors while academic failure was attributed to external factors. Males attributed their academic achievement to ability, whereas females reported no significant difference in their attribution to effort, context or luck. Males blamed poor performance on an unstable cause that could be changed in the future.

Females reported lack of ability as a more important cause for failure than males. Elsewhere, Kitila and Jackline (2012) study among 260 Tanzanian university students found statistically significant differences in attributions between male and female students. A higher number of females attributed their academic performance to internal causes than their male counterparts. The study findings negated those by Abiodun and Owoyele (2011) who found no significant gender differences in causal attributions for failure. The works by Lei (2009) also found that gender had little effect on being successful or not.

Locally, Onduso (2010) studied causal attributions in Mathematics achievement in Kiambu County, Kenya. The study comprised of a sample of 140 (80 girls, 60 boys). The results showed that boys attributed success to themselves more than girls. Boys also attributed success to external factors more than the girls. With regard to failure, boys attributed failure to themselves more than the girls. Boys also attributed failure to external factors more than girls. There were no significant differences in the means between boys and girls in attributing success to external factors and failure to teachers. There were significant differences between boys and girls in attributing failure to internal causes. However, there were no significant differences between boys and girls in attributing failure to external factors. Most of the studies reviewed were conducted outside Kenya and therefore, the need to investigate the variables since the current population of study was from a different cultural context. There were also inconsistency in the causal attributional styles of both males and females, which prompted the current study that explored the gender differences in causal attributions further. The study may help in providing the best intervention for gender for the population of study.
The current study was guided by the following research hypotheses

$H_{a1:}$ There are significant gender differences in participants' causal attributions for
success and failure.
$H_{a2:}$ There are significant gender differences in the dimensions of causal attributions
for success and failure.

Method
The study employed descriptive survey research design. Participants were 585 (320 boys and 280 girls) form three students. The participants were aged between 13-21 years (M=17, SD=8.7). The participants were drawn from 10 secondary schools in Kiambu County, Kenya. The schools were categorized into national, extra-county and sub-county schools. The researcher applied both stratified and simple random sampling techniques. Proportional allocation and simple random sampling were used to select the 585 students from the sampled schools. Relevant research authorization was sought before commencement of the study. All the participants were treated in accordance with the American Psychological Association (APA) Ethical code.

3. Instruments
The Multidimensional Multi-attributional Causality Scale (MMCS) developed by Lefcourt, VonBaeyer, Ware and Cox (1979) was adapted and used in collection of data on causal attributions of the participants. The researcher sought permission to use the instrument from the authors. The

MMCS comprise four factors namely ability, effort, luck and task difficulty, which were conceptualized into three distinct dimensions of, locus of causality (internal, external), stability (stable, unstable) attributions and controllability (controllable, uncontrollable). With regard to locus of causality, both ability and effort were conceptualized as internal while luck and task difficulty were conceptualized as external attributions. For stability both ability and task difficulty were conceptualized as stable while effort and luck were conceptualized as unstable. In terms of controllability effort was conceptualized as controllable while ability, luck and task difficulty were conceptualized as uncontrollable. Causal attributions for success comprised six dimensions namely, internal locus of causality attributions for success, external locus of causality attributions for success, controllable attributions for success, uncontrollable attributions for success, stable attributions for success and unstable attributions for success. Causal attributions for failure also comprised six dimensions namely, internal locus of causality attributions for failure; external locus of causality attributions for failure; controllable attributions for failure; uncontrollable attributions for failure, stable attributions for failure and unstable attributions for failure. The rating was based on a five –point likert scale, ranging from 1(low) to 5(high). To evaluate the reliability of the MMCS, Cronbach alpha (α) coefficient was computed for locus of causality, stability and controllability dimensions. The reliability of the causal attribution measures for causal dimension of locus of causality, Stability and Controllability were .78, .78 .71 respectively.

4. Results
4.1 Hypothesis Testing 1

To address the first research hypothesis, a null hypothesis was formulated:

$H_{01:}$ There are no significant gender differences in the students' causal attributions for success and failure.

In order to test this hypothesis, the participants' causal attributions for success and failure by gender were analyzed to find the mean and the standard deviation. The results are presented in Table 1.

Table 1

Descriptive Statistics for Causal Attributions for success and failure by Gender

Variables	Gender	*M*	*SD*	*SE*
Causal attributions for success	Boys	60.51	6.73	.38
	Girls	59.97	7.53	.46
Causal attributions for failure	Male	59.05	7.41	.42
	Female	61.20	7.40	.45

Note. N=585.

The descriptive statistics in Table 1 revealed that boys had a higher mean score for causal attribution for success ($M = 60.51$, $SD = 6.73$) than girls ($M = 59.97$, $SD = 7.53$). On the other hand girls had higher mean scores in causal attributions for failure ($M = 61.20$, $SD= 7.40$) compared to boys ($M = 59.05$, $SD = 7.40$). To test whether these mean differences were statistically significant,

an independent samples t-test for students' causal attributions was performed. The results are presented in Table 2.

Table 2
Independent Samples t-test for Causal Attributions for success and failure

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	*T*	*df*	Sig.)	*MD*
CAS	3.23	.07	.92	583	.357	.54
			.91	544.53	.361	.54
CAF	1.33	.25	-3.59	583	.000	-2.16
			-3.52	569.59	.000	-2.16

Note. N=585 *df* = degrees of freedom; *MD* = mean difference; CAS = causal attributions for success, CAF= causal attributions for failure.

The results in Table 2 indicate that there were no significant gender differences in the students causal attributions for success (*t* (583) = -.91, *p* > .05). The assumption of homogeneity of variances was evaluated and satisfied through a Levenes *F* test. There was homogeneity of variance for causal attributions for success (*F* (2,583) =3.23, *p*=07) and causal attributions for failure *(F* (2,583) =1.33, *p*=.25). The results however, indicate that there were significant gender differences in the students' causal attributions for failure (*F* (2,583) =3.52, *p*<.05). This meant that even if the boys had more attributions for success than the girls, the mean differences were not statistically significant.

4.2 Hypothesis Testing 2
To address the second research hypothesis, a null hypothesis was formulated:
$H_{02:}$ There are no significant gender differences in the students' dimensions of causal attributions for success and failure.
In order to test for the second hypothesis, the participants' dimensions of causal attributions for success and failure by gender were analyzed. Considering that causal attributions had twelve dimensions, six for causal attributions for success and six for causal attributions for failure, the researcher carried out descriptive analyses of the participants' dimensions of causal attributions by gender to find the mean and the standard deviation. The results are presented in Table 3.

Table 3
Description for Sub -Dimensions of Causal Attributions by Gender

Variables	Boys (315)					Girls (270)				
	Range	*M*	*SD*	*Sk*	*Kur*	*Range*	*M*	*SD*	*Sk*	*Kur*
ILCAS	32	45.14	5.79	-.56	.44	38	45.14	5.85	-.56	.44
ILCAF	34	37.18	5.96	-.27	-.10	36	38.48	5.84	.13	-.10
ELCAS	24	15.37	5.00	.68	.55	22	14.83	4.65	.13	.55
ELCAF	24	21.86	5.02	-.47	.03	24	22.73	5.06	-.57	.03
CAS	19	20.37	3.74	-.17	-.15	21	19.76	3.67	-.26	-.15

CAF	20	14.99	4.28	.23	-.43	22	15.68	4.24	.53	-.42
UNCAS	30	35.75	5.85	.45	.21	37	34.59	6.08	.17	.21
UNCAF	34	36.85	5.95	-.74	.11	32	38.41	5.78	-.24	1.05
SAS	21	27.77	4.34	.11	-.52	27	26.31	4.67	-.01	-.52
SAF	25	24.89	4.74	-.22	.08	31	26.06	4.94	-.21	.08
UNSAS	30	32.74	4.19	-.45	1.57	36	33.66	5.18	-1.02	1.57
UNSAF	26	34.16	5.19	-.46	.14	28	35.15	5.59	-.50	.14

Note. N=585. ILCAS= internal locus of causality attribution for success; ILCAF= internal locus of causality for failure; ELCAS=external locus of causality for success; ELCAF= external locus of causality for failure; CAS=controllable attribution for success; CAF= controllable attribution for failure; UNCAS= uncontrollable attribution for success; UNCAF= uncontrollable attribution for failure; SAS= stable attribution for success; SAF= stable attribution for failure; UNSAS= unstable attribution for success; UNSAF= unstable attribution for failure.

The results in Table 3 show that boys (*M*=45.14, *SD*=5.79) and girls (*M*=45.14, *SD*=5.85) had similar means in internal locus of causality attributions for success. Girls had a higher mean (*M*= 38.48, *SD*= 5.84) for internal locus of causality for failure than boys (*M*=37.18, *SD*= 5.96). Boys had a higher mean (*M*=15.37, *SD*=5.02) in external locus of causality attributions for success than girls (*M*= 14.83 *SD*=4.65). Girls had a higher mean (*M*=22.73, *SD*=5.06) in external locus of causality attribution for failure than boys (*M*=21.86, *SD*=5.00). In the following dimensions of causal attributions, girls had a higher mean than boys; controllable attributions for failure (*M*=15.68, *SD*=4.24), uncontrollable attributions for failure (*M*=38.41, *SD*=5.78), stable attributions for failure (*M*=26.09, *SD*=4.94), unstable attributions for success (*M*=33.66, *SD*=5.18) and unstable attributions for failure (*M*=35.15, *SD*=5.59). Boys had a higher mean in the following dimensions of causal attributions: controllable attributions for success (*M*=20.37, *SD*=3.74), uncontrollable attributions for success (*M*=35.75, *SD*=5.85) and in stable attributions for success (*M*= 27.77, *SD*=4.34). From these figures, the researcher concluded that both boys and the girls primarily attributed their success and failure to internal causes. In terms of controllability, both boys and girl attributed failure mainly to uncontrollable causes.

To test whether the mean differences in the dimensions of causal attributions for success and failure were statistically significant, an independent samples t-test for students' dimensions of causal attributions was run. The results are presented in Table 4.

Table 4

Independent Sample T-test for Gender Differences in Causal Attributions

Variable	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	*T*	*Df*	Sig	*MD*
ILCAS	.25	.62	.002	583	.99	.00
ILCAF	.54	.46	2.65	583	.01	1.30
ELCAS	.21	.64	-1.36	583	.18	-.55
ELCAF	.00	.98	2.06	583	.03	.86
CAS	.07	.79	-2.01	583	.04	-.62
CAF	.70	.44	1.96	583	.05	.69
UNCAS	1.07	.30	-2.36	583	.02	-1.16
UNCAF	.00	.98	3.19	583	.00	1.55
SAS	.09	.77	-3.91	583	.00	-1.46
SAF	.35	.56	2.92	583	.00	1.17
UNSAS	6.08	.01	2.36	583	.01	.91
UNSAF	1.92	.17	2.22	583	.03	.99

Note. N=585. ILCAS= internal locus of causality attribution for success; ILCAF= internal locus of causality for failure; ELCAS=external locus of causality for success; ELCAF= external locus of causality for failure; CAS=controllable attribution for success; CAF= controllable attribution for failure; UNCAS= uncontrollable attribution for success; UNCAF= uncontrollable attribution for failure; SAS= stable attribution for success; SAF= stable attribution for failure; UNSAS= unstable attribution for success; UNSAF= unstable attribution for failure.

Results indicate that out of the 12 dimensions for causal attributions ten, had statistically significant gender differences at *p*<0.05. The exceptions were internal locus of causality attribution for success (*t* (583) =0.00, *p*>0.05) and external locus of causality for success (*t* (583) = -1.36, *p*>0.05). These results imply that most sub-dimensions of causal attributions were responsive to gender.

5. Discussion

Descriptive statistics analysis indicated differences in the attributional style of boys and girls in their causal attributions. The results revealed that both boys and girls attributed success and failure mostly to internal than external causes. This pattern of attribution was favourable since it suggested that success and failure was within their control. In terms of controllability, both boys and girl attributed failure mainly to uncontrollable causes. This pattern of attribution was unhealthy because it would mean that the students would not be able to escape or avoid failure (Weiner, 1985). However, boys attributed success mostly stable factors while the girls attributed success mainly to unstable causes. These findings were consistent with those of Abodunrin (1998) who found out that males perceived success to be a result of stable causes such as ability and failure to changeable causes such as effort while females attributed success to unstable factors such as effort. The current findings are also consistent with those by Onduso (2010), which showed that boys perceived success to be caused by internal causes more than girl. The results also showed that the girls had more internal and uncontrollable explanations for failure while the boys explained failure mainly in

terms of unstable factors. These findings support those of Mok et, al. (2011) whose study among 325 secondary school students in China found that the females explained their academic failure in relation to their lack of ability and strategy use than the males. However, the findings of this study negate those of Onduso (2010) who reported that boys perceived failure to be caused by internal and external causes more than girls.

With regard to hypotheses testing the results found no significant gender differences in the participants' causal attributions for success. These findings are consistent with the works by Lei (2009) who found that gender had little effect on being successful or not. However, there were significant gender differences in the causal attributions for failure. These findings consistent with those of Farid (2012) whose results revealed there were significant gender differences in causal attributional pattern and with those of Mok et al. (2011) who reported significant gender differences in causal interpretations for school performance for students. The study findings however negated those by Abiodun and Owoyele (2011) who found no significant gender differences in causal attributions for failure.

6. Conclusion

On the gender differences and causal attributions, the study revealed there were no significant gender differences in mean causal attributions score for success. The study however, revealed that gender might account for the differences in the students' causal attributions for failure. The findings indicate that girls more consistently attributed failure to uncontrollable and unstable factors. This means that the girls had formed biased causal attributions that were detrimental to academic striving since they could elicit feelings of hopelessness and frustration. The educators should thus come up with educational measures that target girls with the aim of retraining them in their causal attributional styles. The boys should also be encouraged and supported to form causal attributions that will encourage success in academic achievement. The researcher recommended for a replication of a similar study to allow for more comparison.

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