

The Impact of Birth Order, Sib-Size and Siblings' Sex Composition on Educational Attainment in The Maldives

Aishath Shafina

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ABSTRACT

The study investigates the effects of sibship size, birth order and sibling sex composition on educational attainment at higher education. While there are several studies on access and success of higher education focused on socioeconomic status and academic ability of the individuals, this study investigates family composition to explain the advantages and disadvantages in representation at higher education levels. The study specifically explores the structure of the family in terms of birth order, number of siblings and sex of siblings. The findings in this study indicates that lesser the number of members in the family, higher the representation in higher education for males and females. Furthermore, the study also gives evidence that higher the birth-order, lower the participation in higher education for males and females. It is also determined that the number of female siblings in the family does not impact participation in higher education for females and males. However, higher the number of male siblings in the family, lower the participation in higher education for males and females. The study contributes significantly to the understanding of the effects of sibship and its relevance to higher education conceptually, and its findings have implications for planning and policy interventions.

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Keywords:

Family, education, higher education, gender, sibling, birth order, birth-rank, sibship, sibsize, sex

INTRODUCTION

The importance of education for growth and development is undisputed. However, the determinants of educational attainment have been a hot topic of debate in social sciences, and understanding the effects of changes in family sizes on children's education has been a long debate, in psychology, sociology and economics (Duman & Karagöz, 2016; Karagöz, 2016; Soleh & Zainiyati, 2020). Theories such as the Human Capital Model by Becker (1975) proposed models of quantity and quality and tradeoffs, while contrasting theories proposed by Elder (1978) have proposed frameworks explaining societal transitions and underlying direct and indirect factors of resource distribution that affect educational attainment disparities among children. The literature on developing and developed countries show varied results. Majority of the literature based on the context of developed countries show that there is a negative birth order effect where first-born children tend to perform better on measures of educational outcome (Esposito, Kumar & Vllasenor, 2020). However, the context of developing countries shows that later-born children have better educational outcomes due to burdened household responsibility, accumulated by stretching of resources for the elder siblings (Fors and Lindskog, 2016).

A report from the World Bank in 2006 described that equal opportunity is the opportunity among people that a person's life achievements should be determined primarily by his or her talents and efforts, rather than by pre-determined circumstances such as race, gender, social or family backgrounds (USAID, 2020). Therefore, the factors which affects ones' access to higher education, particularly the pre-determined circumstances play a key role in representation in higher education. The Household Income and Expenditure Survey of the Maldives in 2016 found that approximately 64 percent of the population belongs to households where the head of household has below primary or only primary education. The report also stated that poverty falls with increase in the level of education (National Bureau of Statistics, 2016). The Multidimensional Poverty Report published in 2020 found that age group between 18-35 years were significantly less poor than the rest of the population. The report also found that 44 percent of the population lives in female-headed households and that there is no difference in the level of poverty with household being male or a female. It was also found that the average household size in the Maldives was 5.4 persons (National Bureau of Statistics, 2020). These factors play an important role, as several studies have given

¹ Corresponding e-mail: aishath.shafina@gmail.com, orcid.org/0000-0001-8285-0540

evidence that families make decisions to allocate their limited resources according to the value they attribute to individual members of their family.

Aim of the Study

The objective of this research is to understand the disparities within families in terms of educational attainment. This study aims to shed the light of this debate by examining birth order, sib-size and siblings' sex on representation in higher education. Studies in education are mainly concentrated in the comparison between families. However, it is understood that inequity within families are also important to consider. The study investigates the association between sib-size and siblings' sex, and birth order on representation in higher education.

METHOD

The study utilized a survey with a questionnaire as a tool of data collection. Consent of the participants were taken prior to data collection. Participants used an online platform to sign up for the study, and a total of 350 participants completed the survey. The questionnaire was designed to collect data on respondents' education level, birth-order in the family, sibship size and siblings' sex. Close-ended questions were used. Frequency distribution of respondents by sex is shown in Table 1.

Table 1: Sex of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	227	64.9	64.9	64.9
Male	123	35.1	35.1	100.0
Total	350	100.0	100.0	

Frequency distribution of respondents by participation in higher education is shown in Table 2.

Table 2: Participation in higher education by sex of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Not participated	124	35.4	35.4	35.4
Participated	226	64.6	64.6	100.0
Total	350	100.0	100.0	

Data Analyses

For data analysis, SPSS Statistical Package Programme was used. Descriptive statistics were run to understand the frequency of occurrence. The data used for analysis is ordinal scale data. Therefore, to determine the association between the variables measured on an ordinal scale, Goodman and Kruskal's gamma was used as there are several tied ranks. The Goodman and Kruskal's gamma was used to interpret the following associations: (1) the association between female participation in higher education and sib-size, (2) the association between male participation in higher education and sib-size, (3) the association between female participation in higher education and birth-order, (4) the association between male participation in higher education and birth-order, (5) the association between female participation in higher education and the number of female siblings, (6) the association between female participation in higher education and the number of male siblings, (7) the association between male participation in higher education and the number of male siblings and (8) the association between male participation in higher education and the number of female siblings.

FINDINGS

Frequency distribution of respondents by sib-size is shown in Table 3. Small families are categorized as families having less than seven members and large families are categorized as families with more than seven members in their family. The frequency table shows that 85.7 percent of respondents had small families, while only 14.3 percent of respondents had large families.

Table 3: Sib-size

	Frequency	Percent	Valid Percent	Cumulative Percent
Large	50	14.3	14.3	14.3
Small	300	85.7	85.7	100.0
Total	350	100.0	100.0	

Table 4 shows the frequency distribution of respondents by birth-order. The birth-order is categorized as eldest, second eldest, middle and the youngest. The distribution table shows that the majority of the respondents belongs to 'middle' in the birth-order with 64.6 percent. The lowest category of birth-order observed is the second eldest, with only 2.6 percent. 51.1 percent belong to the youngest cohort, while 11.7 percent belong to the eldest cohort.

Table 4: Birth-order

	Frequency	Percent	Valid Percent	Cumulative Percent
Eldest	41	11.7	11.7	11.7
Middle	226	64.6	64.6	76.3
Second eldest	9	2.6	2.6	78.9
Youngest	74	51.1	51.1	100.0
Total	350	100.0	100.0	

Table 5 and figure 1 shows descriptive statistics and a histogram representing boy siblings in respondents' families. The statistics shows that on average, there are 3 boy siblings in a family. The table 6 and figure 2 shows descriptive statistics and a histogram representing girls' siblings in respondents' families.

Table 5: Male siblings in the family

Mean	3.329
Median	3.000
Mode	1.0
Std. Deviation	2.0166
Variance	4.067
Range	7.0
Minimum	.0
Maximum	7.0
Percentile 25	1.000
Percentile 50	3.000
Percentile 75	5.000

Figure 1: Male siblings in the family

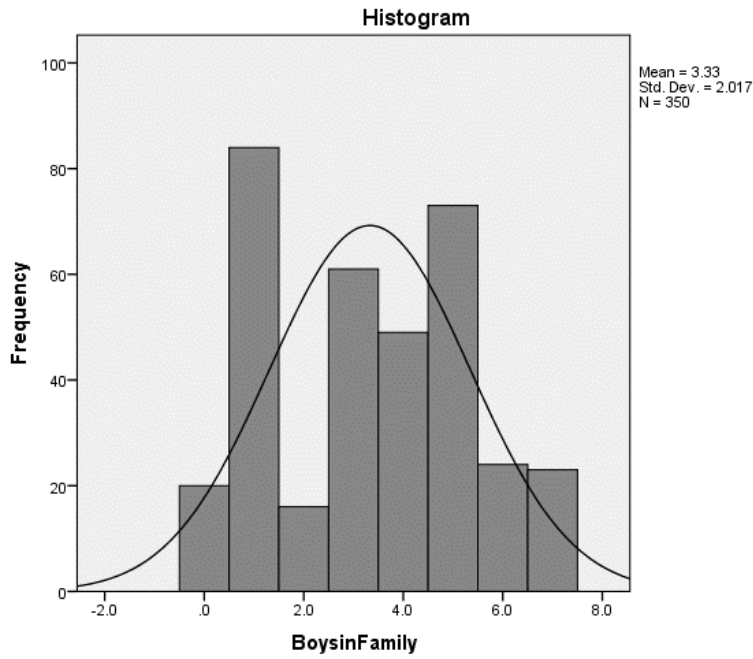


Table 6: Female siblings in the family

Mean	2.874
Median	3.000
Mode	1.0
Std. Deviation	1.6416
Variance	2.6965
Range	5.0
Minimum	1.0
Maximum	6.0
Percentile 25	1.000
Percentile 50	3.000
Percentile 75	4.000

Figure 2: Female siblings in the family

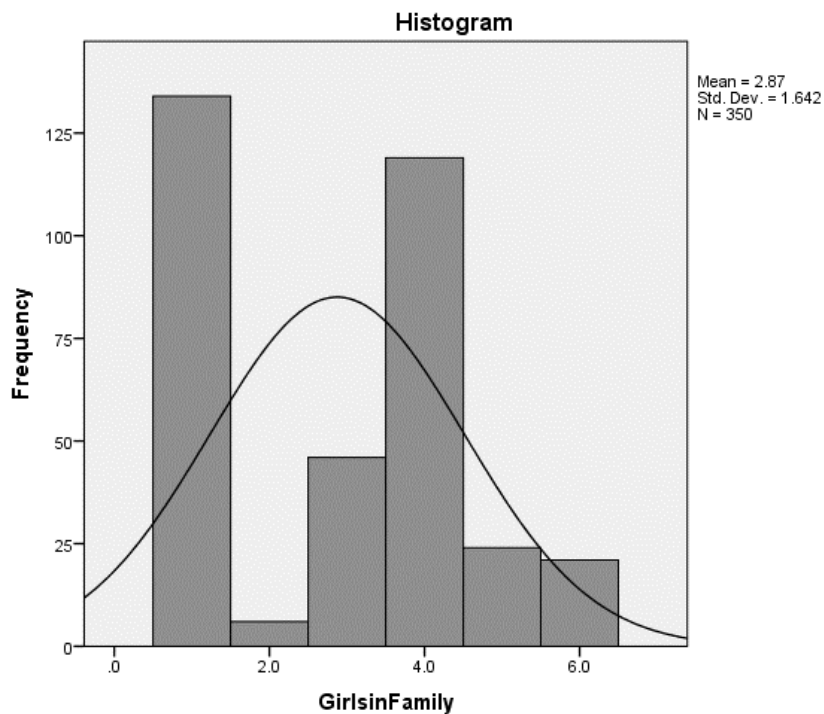


Figure 3: Hypothesis testing for the association between female participation in higher education and sib-size

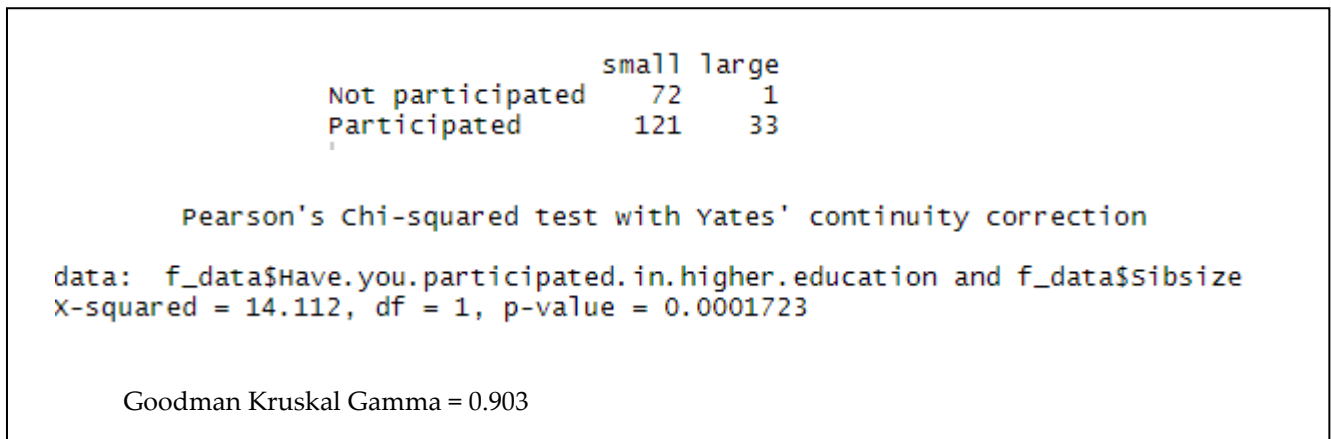


Figure 3 shows the results of P-value, Significance test and Goodman Kruskal Gamma association between female participation in higher education and sib-size. The following null hypothesis and alternative hypothesis were tested to find the association between the variables.

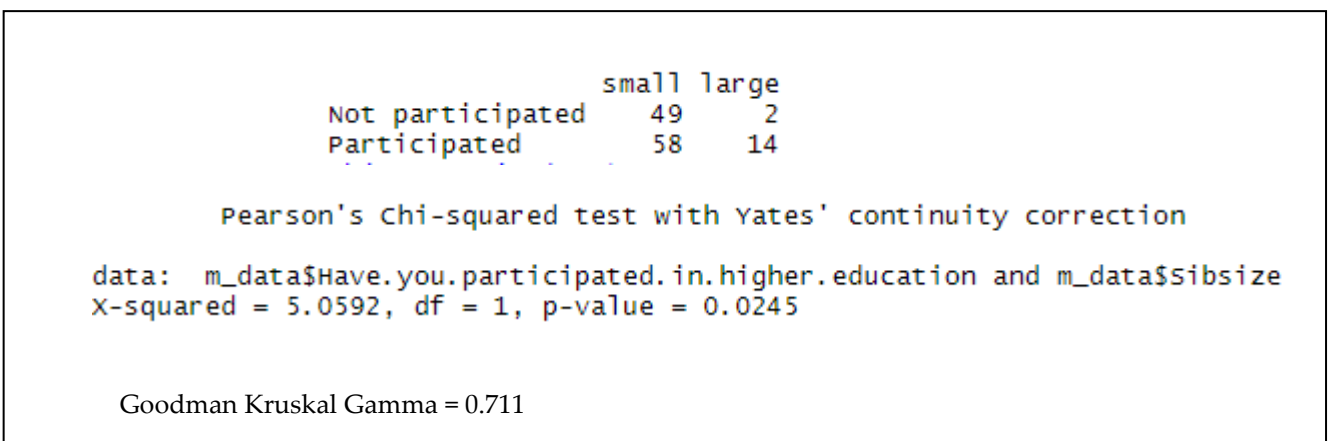
Ho: there is no association between female participation in higher education and sib-size

Ha: higher the number of sib-size, lower the participation in higher education for females

Since the p-value (0.00017) is less than 0.05, the null hypothesis is rejected at 5% significance level. Therefore, it is concluded that there is a significant association between female participation in higher education and sib-size.

Even though the null hypothesis is rejected at 5% significance level, it is important to consider that the alternative hypothesis may not be accepted. The Goodman Kruskal Gamma was tested and resulted 0.903. Therefore, it is concluded that higher the number of sib-size, higher the participation in higher education for females.

Figure 4: Hypothesis testing for the association between male participation in higher education and sib-size



Ho: there is no association between male participation in higher education and sib-size

Ha: higher the number of sib-size, lower the participation in higher education for male

Since the p-value (0.0245) is less than 0.05, the null hypothesis is rejected at 5% significance level. Therefore, it is concluded that there is a significant association between male participation in higher education and sib-size.

Even though the null hypothesis is rejected at 5% significance level, it is important to consider that the alternative hypothesis may not be accepted. Therefore, The Goodman Kruskal Gamma was tested and resulted 0.711. Therefore, it is concluded that higher the number of sib-size, higher the participation in higher education for males.

Figure 5: Hypothesis testing for the association between female participation in higher education and birth-order

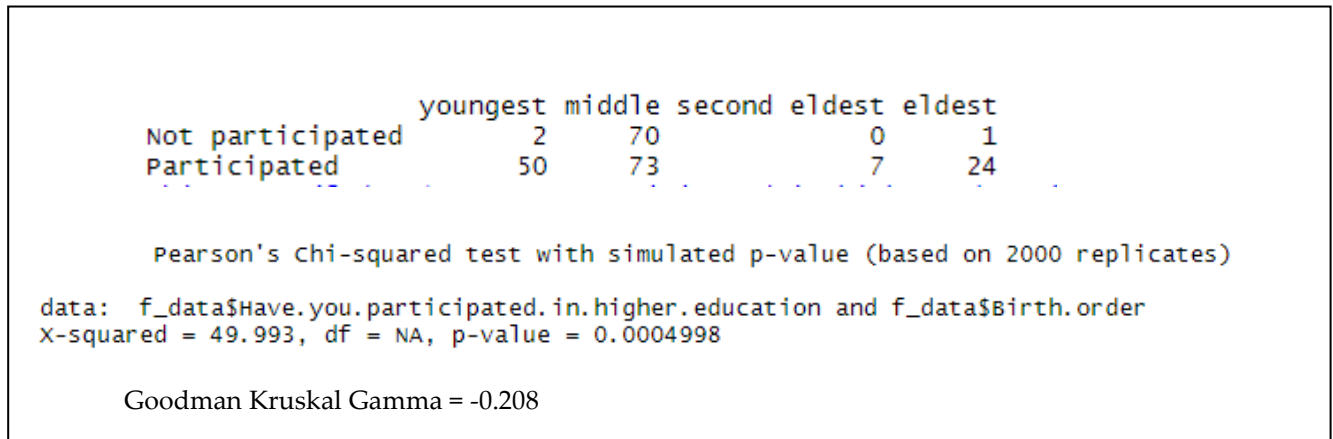


Figure 5 shows the results of P-value, Significance test and Goodman Kruskal Gamma association between female participation in higher education and birth-order. The following null hypothesis and alternative hypothesis were tested to find the association between the variables.

Ho: there is no association between female participation in higher education and birth-order

Ha: higher the birth-order, lower the participation in higher education for females

Since the p-value (0.0005) is less than 0.05, the null hypothesis is rejected at 5% significance level. Therefore, it is concluded that there is a significant association between female participation in higher education and birth-order.

Although null hypothesis is rejected at 5% significance level, it is important to consider that alternative hypothesis may not be accepted. Therefore, The Goodman Kruskal Gamma was tested and resulted -0.208. Therefore, null hypothesis is rejected at 5% significance level, and alternative hypothesis accepted. it is concluded that higher the birth-order, lower the participation in higher education for females.

Figure 6: Hypothesis testing for the association between male participation in higher education and birth-order

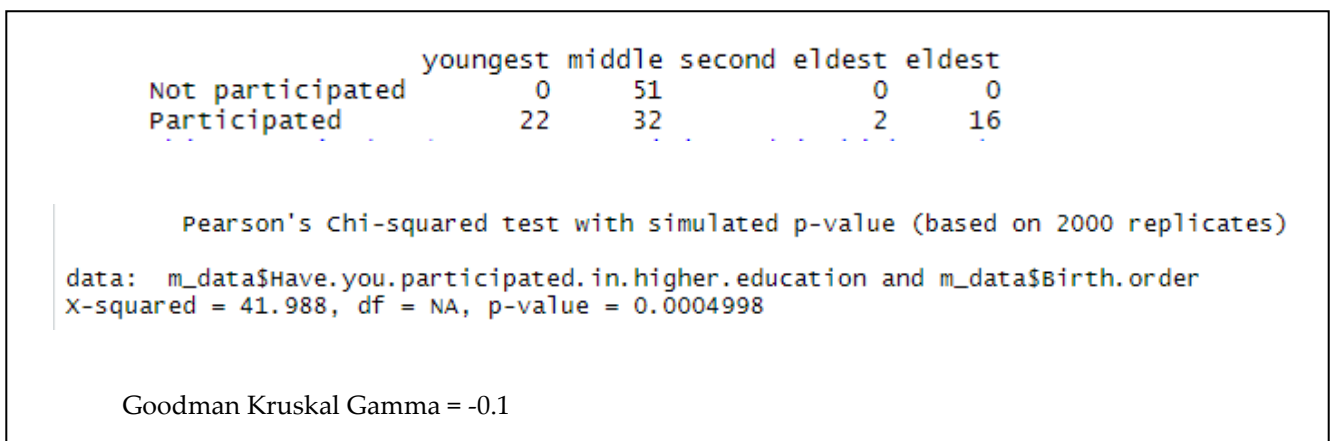


Figure 6 shows the results of P-value, Significance test and Goodman Kruskal Gamma association between male participation in higher education and birth-order. The following null hypothesis and alternative hypothesis were tested to find the association between the variables.

Ho: there is no association between male participation in higher education and birth-order

Ha: higher the birth-order, lower the participation in higher education for males

Since the p-value (0.0005) is less than 0.05, the null hypothesis is rejected at 5% significance level. Therefore, it is concluded that there is a significant association between male participation in higher education and birth-order.

Although the null hypothesis is rejected 5% significance level, it is important to consider that the alternative hypothesis may not be accepted. Therefore, Goodman Kruskal Gamma was tested and resulted - 0.1. Therefore, the null hypothesis is rejected at 5% significance level, and the alternative hypothesis accepted. It is concluded that higher the birth order, lower the participation in higher education for males.

Figure 7: Hypothesis testing for association between female participation in higher education and the number of female siblings in the family

```
Pearson's product-moment correlation
data: as.numeric(f_data$Have.you.participated.in.higher.education) and f_data$Girls.in.Family
t = -1.1888, df = 225, p-value = 0.2358
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.20708598  0.05174013
sample estimates:
      cor
-0.07900424
```

Figure 7 shows the results of P-value, Significance test and correlation association between female participation in higher education and number of female siblings in the family. The following null hypothesis and alternative hypothesis were tested to find the association between the variables.

Ho: there is no association between female participation in higher education and the number of female siblings in the family

Ha: higher the number of female siblings in the family, lower the participation in higher education for females

Since the p-value (0.2358) is greater than 0.05, the null hypothesis is accepted at 5% significance level. Therefore, it is concluded that there is no significant association between female participation in higher education and the number of female siblings in the family.

Figure 8: Hypothesis testing for association between male participation in higher education and the number of female siblings in the family

```
Pearson's product-moment correlation
data: as.numeric(m_data$Have.you.participated.in.higher.education) and m_data$Girls.in.Family
t = 0.53679, df = 121, p-value = 0.5924
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.1294095  0.2238443
sample estimates:
      cor
0.04874153
```

Figure 8 shows the results of P-value, Significance test and correlation between male participation in higher education and number of female siblings in the family. The following null hypothesis and alternative hypothesis were tested to find the association between the variables.

Ho: there is no association between male participation in higher education and the number of female siblings in the family

Ha: higher the number of female siblings in the family, lower the participation in higher education for male.

Since the p-value (0.5924) is greater than 0.05, the null hypothesis is accepted at 5% significance level. Therefore, it is concluded that there is no significant association between male participation in higher education and the number of female siblings in the family.

Figure 9: Hypothesis testing for association between female participation in higher education and the number of male siblings in the family

```
Pearson's product-moment correlation
data: as.numeric(f_data$Have.you.participated.in.higher.education) and f_data$Boys.in.Family
t = -5.0959, df = 225, p-value = 7.348e-07
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.4337165 -0.1998286
sample estimates:
      cor
-0.3216708
```

Figure 9 shows the results of P-value, Significance test and correlation between female participation in higher education and number of male siblings in the family. The following null hypothesis and alternative hypothesis were tested to find the association between the variables.

Ho: there is no association between female participation in higher education and the number of male siblings in the family

Ha: higher the number of male siblings in the family, lower the participation in higher education for female.

Since the p-value (7.348) is less than 0.05, the null hypothesis is rejected at 5% significance level. Therefore, it is concluded that there is a significant association between female participation in higher education and the number of male siblings in the family. Since correlation is -0.32, it is concluded that higher the number of male siblings in the family, lower the participation in higher education for females.

In conclusion, the null hypothesis is rejected at 5% significance level in favour of the alternative hypothesis; higher the number of male siblings in the family, lower the participation in higher education for females.

Figure 10: Hypothesis testing for association between male participation in higher education and the number of male siblings in the family

```
Pearson's product-moment correlation
data: as.numeric(m_data$Have.you.participated.in.higher.education) and m_data$Boys.in.Family
t = -3.1031, df = 121, p-value = 0.002385
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.42796568 -0.09923703
sample estimates:
      cor
-0.2715015
```


Figure 10 shows the results of P-value, Significance test and correlation between male participation in higher education and number of male siblings in the family. The following null hypothesis and alternative hypothesis were tested to find the association between the variables.

Ho: there is no association between male participation in higher education and the number of male siblings in the family

Ha: higher the number of male siblings in the family, lower the participation in higher education for male.

Since the p-value (0.0024) is less than 0.05, the null hypothesis is rejected at 5% significance level. Therefore, it is concluded that there is a significant association between male participation in higher education and the number of male siblings in the family. Since correlation is -0.27, it is concluded that higher the number of male siblings in the family, lower the participation in higher education for males.

In conclusion, the null hypothesis is rejected at 5% significance level in favour of the alternative hypothesis. The higher the number of male siblings in the family, lower the participation in higher education for males.

RESULT, DISCUSSION, AND SUGGESTIONS

Studies on educational equity has identified that family compositions play an important role in the educational attainment of males and females. Family contexts contributes to the development of educational inequities, and large families has been one significant aspect that affects individuals' educational achievement across cultures (Blau & Duncan, 1967).

In the argument of sib-size affecting participation in higher education, the literature is very much divided. The resource dilution hypothesis by Blake explains that larger sib-sizes produce a 'quantity/quality' trade-off where most siblings means fewer of the children will have adequate support for their education (Blake, J, 1985). Having more siblings is seen to have a negative impact on educational attainment due to stretching of resourcing such as parental time, money and other necessary support (Becker, 1981) There are also theories which suggest that larger sib-size affects education in terms of parental preferences and expectations for their children. The 'spurious causation' theory explains that parental preferences rather than the number of siblings, are seen as a root cause of the association between sib-size and education (Rodgers, JL, 2001), (Rodgers, Cleveland, Van den Oord, & Rowe, 2000).

On the other hand, higher sib-size is also found to have a positive impact on educational attainment. In studying the birth order effects on educational attainment and educational transitions in West Germany, Harkonen found that birth order effects are weaker for females in larger families, but do not vary according to families' socioeconomic characteristics (Härkönen, 2014). An analysis of the Programme for International Student Assessment (PISA) data from 20 western countries found that better family wealth, an increased level of parental education and a higher parental occupational status were associated with increased educational attainments more strongly among 15 years old's' who have siblings than among without siblings (Antti , Jani Erola, & Johanna, 2016). Furthermore, there are arguments that siblings may provide resources that encourage children's' education through mentoring, tutoring, socialization experience or sharing of household income (Zajonc, 1976), (Zajonc & Markus, 1975), (Downey & Condrón, 2004). Another theory which was established by the psychologist Zajonc and his colleagues is Confluence Theory. The theory states that children's' intellectual development is molded by the intellectual environment in the family, which is a function of the average of the intellectual levels of all members of the family (Zajonc R. B., 1976). Therefore, having a bigger family with siblings are at times viewed positively in educational attainment, depending on the context. This study also gives evidence that higher the number of sib-size, higher the participation in higher education, for males and females, observed in the Maldives.

In regard to birth-order, the majority supports a negative association between siblings' rank (birth order) and children's' educational performance. A study conducted in Saudi Arabia found that birth order plays an important role in defining a child's character and personality and academic achievement. A study carried out in Turkey found that the middle born children perform less in schooling compared to the other

children (Dayiogu , Kirdar, & Tansel, 2009). The Ecuadorian setting shows that laterborn children attain higher education levels (De Haan M, Plug, & Rosero, 2014). A study conducted in Great Britain found that birth order has an effect on educational attainment not only directly, but also indirectly via aspiration. They also found that females tend to have higher levels of educational, aspirational and attainment (Feifei, 2014). A study conducted in the context of Malaysia found that first-borns are always described as being responsible, high achievers and perfectionists while last born and only child are always described as the baby of the house and spoiled (Ha & Tam, 2011). The context of Norway showed that there is a negative correlation between family size and children's education, and higher birth order has a significant and large negative effect on children's education (Black, Devereux, & Salvanes, 2005). A study based in the context of Sweden found that later-borns in large families benefit from educational expansion due to the longer average birth interval between the first and the last child in large families, while the case was otherwise when education was not expanding in the country (Barclay, 2018). This study also gives evidence that higher the birth-order, lower the participation in higher education, for males and females, in the context of the Maldives.

However, it is also important to acknowledge that there are contexts in which birth order has little significance on educational attainment (Rohrer, Egloff, & Schmukle, 2015). Others argue that birth spacing plays a key role in determining resource allocation. Lindert argues that because of the absence of other competing children, first born and last born, and only children do better than other children in the family, and this difference decreases with closer birthing space (Lindert, 1977) .

Studies on sibship sex composition on education attainment has been discussed in various contexts. However, it is understood that it is a relative term based on the socioeconomic and sociocultural setting of the country. In general, sibship sex composition has been discussed in relation to other household phenomenon to understand its direct and indirect impact on education. A study on sibship sex composition on educational attainment found that the increase in the number of opposite-sex siblings hurts educational attainment efforts (Conley, 2002). A study on Hispanic families found that the number of household members, living with biological parents and doing household chores are key variables associated with college enrollment. It was found that among males, participation in household chores is related to an increase in college enrollment while for females, fewer house members increased their college enrollment (Settles, 2011). There is also evidence that there are cultural preferences attached to educational attainment. Gender constellation is another variable that influences the quality of the sibling relationship, which refers to whether siblings are of same-sex or different sex.

A study based in the context of India found that negative birth order effects in India due to the preference of having a son, favouring, in particular, the oldest son (Jayachandran & Pande, 2015). Another study in the same context found that if there is any problem of access or costs, the girls are to suffer first (Sharma, 2016). This also complements with the findings of this study as it shows that, having a high number of male siblings decreases participation of higher education among the female cohorts, in the context of Maldives.

The argument of this study is also in line with several other studies done in various parts of the world. In studying the sibling sex composition effect on education in China, it was observed that being the eldest child gives an education benefit to male and not female children as they are often assigned supervisory roles for younger siblings. Also, an increase in female siblings in the family gives an advantage to Chinese men and a lesser extent to Chinese women (Lei, Shen, Smith, & Zhou, 2016). A study in Vietnam found that having an elder brother reduces the chances of educational attainment for girls (Quang & Viet Cuong, 2014). There is also evidence from other parts of the world. A study based in the Nepali context found that there is a positive effect on boys' education of having a first-born sister, who presumably takes care of household work so the boys can focus on school. And this is only the case of boys' education (Hatlebakk, 2012). This study also concludes that there is no impact on male participation in higher education due to an increase in female siblings. However, female representation in higher education decreases as male-siblings increases.

White, Ruther and Kahn in 2016 identified that relative to boys, the presence of younger siblings reduces the likelihood of girls advancing in both reading and mathematics (White, Ruther, & Kahn, 2016). Emerson and Souza found that daughters in Brazil who are first-born are less likely to go to school than later-

born daughters (Emerson & Souza, 2008). There is also evidence to suggest that older girls' education was constrained by having more younger siblings in the household; because the workload was shared amongst the siblings.. Furthermore, it is also seen that the number of brothers are found to be negatively related to educational attainment (Chu, Xie, & Yu, 2007). Benin and Johnson also reported that social origins had larger effects on the educational attainment of sisters than on brothers (Benin & Johnson, 1984). Older girls often tends to be a good nurturer and teacher while an older boy, on the other hand, has a tendency to be better stimulators and models (Cicirelli, 1994). This is also in line with the findings of this study; this study concludes that there is no significant association between female participation in higher education and the number of female siblings in the family. However, higher the number of male siblings in the family, lower the participation in higher education for females.

A study based on the Egyptian context found that later-born children are at an advantage as compared with the first-born. Erjanaes and Portner found that later-born boys in the Philippines spend more time in school (Erjanaes & Portner, 2004). In families with older sisters, educational attainment seems to be better off; because girls earn money to support the family; or were withheld from attending school to allow younger siblings to attend. (Salem, 2005). Some research that explores family composition effects has investigated the possibility that particular combinations of brothers and sisters might reduce parental investments in daughters' schooling (Kristen & Anne, 1994). This study concludes that there is no significant association between male participation in higher education and the number of female siblings in the family. However, the study also gives evidence that higher the number of male siblings in the family, lower the participation in higher education for males.

Therefore, it is concluded that family characteristics of sibship size, birth order and sibling sex composition plays a pivotal role in education attainment at higher education levels. The findings in this study indicates that lesser the number of members in the family, higher the representation in higher education for males and females. Furthermore, the study also gives evidence that higher the birth-order, lower the participation in higher education for males and females. It is also determined that the number of female siblings in the family does not impact participation in higher education for females and males. However, higher the number of male siblings in the family, lower the participation in higher education for males and females.

REFERENCES

- Al-Khayat, M. M., & AL-Adwan, F. E. (2016). The effect of birth order on personality traits and academic performance at sample of families in Jordan. *Eur J Soc Sci*, 151-161.
- Antti , T. O., Jani Erola, E., & Johanna, K. (2016). Parental resources, sibship size, and educational performance in 20 countries: Evidence for the compensation model. *Cross Cultural Research*, 452-477.
- Armor, D. J. (2003). *Maximizing intelligence*. NJ: Transaction Publishers.
- Barclay, K. J. (2018). The birth order paradox: Sibling differences in educational attainment. *Research in Social Stratification and Mobility*, 56-65.
- Becker, G. S. (1975). *Human capital: A theoretical and empirical analysis, with special reference to education*. NBER.
- Becker, G. (1981). *A treatise on the family*. Cambridge: Harvard University Press.
- Benin, M. H., & Johnson, D. R. (1984). Sibling similarities in educational attainment: A comparison of like-sex and cross-sex sibling pairs. *Sociol.Educ*, 11-21.
- Black, S. E., Devereux, P. J., & Salvanes, K. G. (2005). The more the merrier? The effect of family size and birth order on children's education. *The Quarterly Journal of Economics*, 669-699.

- Blake, J. (1985). Number of siblings and educational mobility. *American Sociological Review*, 84-94.
- Blake, J. (1981). Family size and the quality of children. *Demograph*, 421-442.
- Blandin, A., Herrington, C., & Steelman, A. (2018). *How Does Family Structure during Childhood Affect College Preparedness and Completion?* Federal Reserve Bank of Richmond.
- Blau, P., & Duncan, O. (1967). *The American Occupational Structure*. New York: Wiley.
- Chu, C., Xie, Y., & Yu, R. R. (2007). Effects of sibship structure revisited: Evidence from intrafamily resources transfer in Taiwan. *Sociology of Education*, 91-113.
- Cicirelli, V. G. (1994). Sibling relationships in cross-cultural perspective. *Journal of Marriage and Family*, 7-20.
- Conley, D. (2002). Sibship Sex Composition: Effects on Educational Attainment. *Center for Advanced Social Science Research*.
- Dayiogu, M., Kirdar, M. G., & Tansel, A. (2009). Impact of sibship size, birth order and, sex composition on school enrolment in urban Turkey. *Oxf Bull Econ Stat*, 399-426.
- De Haan M, M., Plug, E., & Rosero, J. (2014). Birth order and human capital development evidence from Ecuador. *Journal of Human Resources*, 359-392.
- Downey, D., & Condron, D. (2004). Playing well with others in kindergarten: The benefit of siblings at home. *Journal of Marriage and Family*, 333-350.
- Duman, T. & Karagöz, S. (2016). An evaluation of Turkish teacher education system compared to other models in different countries. *International Journal of Educational Research Review*, 1 (1), 1-13.
- Elder, G. H. (1978). *Family history and the life course. Transitions*. New York: Academic Press, 17-64.
- Emerson, P. M., & Souza, A. P. (2008). Birth order, child labor, and school attendance in Brazil. *World Development*, 1647-1664.
- Esposito, L., Kumar, S.M. & Villaseñor, A. (2020). The importance of being earliest: birth order and educational outcomes along the socioeconomic ladder in Mexico. *J Popul Econ* 33, 1069–1099.
- Erjanaes, M., & Portner, C. C. (2004). Birth order and the intrahousehold allocation of time and education. *Review of Economics and Statistics*, 1008-1019.
- Feifei, B. (2014). Sibling Configurations, Educational Aspiration and Attainment . *Institute for Social and Economic Research*.
- Fors, Congdon., & Lindskog., Annika. (2016). Within Family Inequalities in Human Capital Accumulation in India: Birth Order and Gender Effects, *CDE Working Papers*.
- Ha, T. S., & Tam, C. L. (2011). A study of birth order, academic performance, and personality. *International Conference on Social Science and Humanity*, 28-32.
- Hansen, T. D., & McIntire, W. G. (1989). Family Structure Variable as Predictors of Educational and Vocational Aspirations of High School. *Research in Rural Education*, 39-49.
- Härkönen, J. (2014). Birth Order Effects on Educational Attainment and Educational Transitions in West Germany. *European Sociological Review*, 166-179.
- Hatlebakk, M. (2012). *Son-preference, number of children, education and occupational choice in rural Nepal*. CMI.
- Jayachandran, S., & Pande, R. (2015). Why are Indian children so short? *CEPR Discussion Paper 10503*.

- Karagöz,S. (2016). Opinions and suggestions regarding various subjects on the educational guidance in the second constitutional era. *Journal of Family Counseling and Education,1(1),1-9.*
- Kristen, B., & Anne, C. (1994). *The effect of sibling sex composition on women's education and earning.*
- Kuo, H. H., & Hauser, R. M. (1997). How Does Size of Sibship Matter? Family Configuration and Family Effects on Educational Attainment. *Social Science Research, 69-94.*
- Lei, X., Shen, Y., Smith, J. P., & Zhou, G. (2016). Sibling gender composition's effect on education: Evidence from China. *Journal of Population Economics.*
- Li, J., Dow, W. H., & Bixby, L. R. (2014). The declining effect of sibling size on children's education in Costa Rica. *Demographic Research, 1431-1454.*
- Lindert, P. (1977). Sibling position and achievement. *Journal of Human Resources, 198-219.*
- Morgan, P., Hillemeier, M., & Maczuga, S. (2009). Risk Factors for Learning-Related Behaviour Problems at 24 Months of Age: Population-Based Estimates. *Journal of abnormal child psychology, 401-413.*
- National Bureau of Statistics. (2016). *Household Income and Expenditure Survey (HIES): Analytical Report: Poverty and Inequality.* Male': Ministry of Finance & Treasury.
- National Bureau of Statistics. (2020). *National Multidimensional Poverty in Maldives.* Male': National Bureau of Statistics.
- Nato, P. B. (2016). Analysis of Family Structure Influence on Academic Performance Among Secondary School Students in Bungoma East Sub-County, Kenya. *International Journal of Secondary Education, 12-22.*
- Powell, B., & Steelman, L. C. (1993). The Educational Benefits of Being Spaced Out: Sibship Density and Educational Progress. *American Sociological Review, 367-381.*
- Quang, T. D., & Viet Cuong, N. (2014). Having an Older Brother Is Good or Bad for Your Education And Health? Evidence from Vietnam. *Munich Personel RePEc.*
- Rodgers, J., Cleveland, H., Van den Oord, E., & Rowe, D. (2000). Resolving the debate over birth order, family size, and intelligence. *Am Psychol, 599-612.*
- Rodgers, J.L. (2001). What causes birth order-intelligence patterns? The admixture hypothesis, revived. *Am Psychol, 505-510.*
- Rohrer, J. M., Egloff, B., & Schmukle, S. C. (2015). Examining the effects of birth order on personality. *Proc Natl Acad Sci, 14224-14229.*
- Salem, R. (2005). *Sibling Configuration: Impact on Educational and Health.* Egypt.
- Schoon, I., Jones, E., Cheng, H., & Maughan, B. (2012). Family hardship, family instability and cognitive development. *Journal of Epidemiology & Community Health, 716-722.*
- Settles, J. L. (2011). *The effects of family structure, family responsibilities, and family closeness on the college decisions of Hispanic high school closeness on the college decisions of Hispanic high school.* Iowa Research Online.
- Sharma, A. (2016). Role of Gender in Education-Its Problem and Prospects with Special Reference in the Context of India. *The International Journal of Humanities and Social Sciences.*

- Soleh & Zainiyati,H.S. (2020). Does motivation, personality and environment influence enthusiasm of generation z to continuing study to higher education? *International Journal of Educational Research Review*,5(4),287-295.
- Thomas, H., Thomas, S., Sellstrom, E., & Petticrew, M. (2013). Housing improvement for health and associated socio-economic outcomes. *Cochrane Database of Systematic Reviews*.
- White, G., Ruther, M., & Kahn, J. (2016). Educational Inequality in India: An analysis of Gender Differences in Reading and Mathematics. *India Human Development Survey*.
- Zajonc, R. (1976). Family configuration and intelligence. *Science*, 227-236.
- Zajonc, R., & Markus, G. (1975). Birth order and intellectual development. *Psychological Review*, 74-88.