



Life Satisfaction and Fertility among Women in a Developing Nation: A Cross-sectional Study

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Abstract

The correlation between being satisfied with life impacting fertility levels has received little to no studious attention and has never previously been spoken of in Jamaica, as such this had led into the investigation of the relationship between Life Satisfaction and Fertility among Jamaicans. The main objectives of this study is, to determine fertility and the importance of offspring production among Jamaicans and to examine the category of life satisfaction among Jamaicans. With the intention of corroborating the hypotheses 1. Life satisfaction influences the decision to have children among Jamaicans. 2. People with high levels of satisfaction are more likely to have children among Jamaicans. In carrying out this research, a correlational associated approach was used to obtain data about life satisfaction and fertility among Jamaicans, using a calculated sample size of 1075. A standardized survey was used to collect data using Google forms. The retrieved data was analyzed and converted from Google Forms into Statistical Packages for the Social Sciences (SPSS) for Windows, Version 25.0, with confidence interval of 95%. The findings revealed that 39.9% (427) of the respondents are moderately satisfied with life and 49.3% (527) of the respondents have no child/children. It also revealed that 46.4% (496) of the respondents are between the ages 18-27years and 61.0% of the respondents are single. The majority of the respondents 43.3% (527) believed having children is very important, 32.1% (343) believed it is important, 16.0% (171) it is slightly important, and 8.7% (93) believed it is not important. A significant statistical relationship exists between fertility and of life satisfaction of Jamaican women (χ^2 critical = 28.845 < χ^2 obtained = 70.385, P < 0.001)

Keywords: Developing nation, Fertility, Life satisfaction, Jamaica

Introduction

According to Mencarini, Vignoli, Zeydanli, and Kim(2018), in contemporary developed societies, with low fertility, childbearing is usually an outcome of couples' decision making based on their level of life satisfaction. They mentioned that, having children requires considerable amounts of energy and investment on the parent's part. They further asserted that women satisfied with their overall life are more likely to be better prepared to commence the task of nurturing a child. Which means that if life satisfaction facilitates fertility, then this relationship should be observable in contemporary societies including Jamaica. According to the Statistical Institute of Jamaica (STATIN), the birthrate of Jamaica decreased gradually from 2015 (37,900) to 2018 (34,209) with a slight increase in 2019 (34,632) (Statistical Institute of Jamaica, 2019).

Mencarini, Vignoli, Zeydanli, and Kim (2018) reported that, after the birth of the first child, it potentially influences further fertility choices based on perceived costs and experiences. Due to inadequate research conducted on the correlation between life satisfaction and fertility among Jamaicans, it has led to the investigation into the impact of life satisfaction on fertility among Jamaicans. In hopes of identifying a relationship between the two variables through the basis of testing the hypotheses: 1) Life satisfaction influences the decision to have children among Jamaicans, and 2) People with high levels of satisfaction are more likely to have children among Jamaicans. The hypothesis of this research is tested by assessing life satisfaction as a determining factor of fertility behavior among Jamaicans. This research contains the methodology and the literature review which is a comprehensive review of previous work researchers have done on similar topics as well as theory used during the research. The research also includes the findings obtained from the survey and discusses in detail the implications of the findings.

Theoretical Framework

According to Nicole Celestine (2021), the Affective Forecasting Theory was first discovered by Kahneman and Snell in 1992. Kahneman and Snell postulated that the Affective Forecasting Theory relates to the power to predict one's emotions for the future, which can be a vital skill in daily decision-making (Wilson & Gilbert, 2001). Fertility is the total number of offspring an individual can produce across a group interval or lifetime (Walsh, et al., 2018). The affective forecasting theory was chosen to apply to the research topic "Life satisfaction and fertility." According to Mencarini, Vignoli, Zeydanli, & Kim (2018), individuals base their decisions on affective forecast; this is where their emotional actions foresee future occurrences. When individuals decide to have a child, they expect a happy event leading to a positive outcome for life's satisfaction. The positive and negative feelings and expressions of happiness, as well as cognitive assessments about life satisfaction, connect to fertility behavior. Considering that several young adults want to have children, the theoretical deduction predicts that having children will increase their life satisfaction (Hansen, Slagsvold, & Moum, 2012).

Literature Review

Can subjective well-being have an impact on fertility? For both women and men, individual subjective well-beingsometimes measured as happiness, sometimes as overall life satisfaction represents an important goal to reach before making the decision to have children (Mencarini, Vignoli, Zeydanli & Kim, 2018).This study provides pertinent information related to the topic which can be useful to future researchers. The importance of this study aids researchers in seeing the course as to which their country's societal development and structure status in which they resides. In the long run, with stability and high levels of life satisfaction, individuals are more likely prepared to start the monumental task of childbearing, producing proactive individuals. In contrast to a poorer societal status with little to no life satisfaction and high levels of fertility, which may produce less proactive individuals. According to Fawcett (1988) a major reason to have children is that they may provide economic or psychological benefits to their parents. Children in developed countries do not contribute appreciably to household income, and because grown children in these countries usually do not provide material support to their elderly parents, the inspiration to become a parent seems to be initially driven by the expected psychological benefits("Parenthood and life satisfaction", 2021).

According to Evans and Kelley (2004), Zimmermann and Easterlin (2006), and Carmichael and Whittaker (2007) the presence of a partner contributes to a person's satisfaction for life, and also, obviously, it would influence procreation by improving the stability and the probability of continuation of the union". The researchers further stated that amongst those who have already had children, the satisfaction derived from those children will also have played a part in the overall level of satisfaction with life (Kohler et al. 2005). Satisfaction with life can arise from satisfaction with one or more range of different aspects of life, including personal relationships, health, finances, employment, housing, and education. This assesses whether satisfaction with particular domains of life is related to subsequent fertility, after controlling for a range of demographic, socioeconomic and cultural confounding variables which may affect both satisfaction with life and fertility (Nick Parr, 2010). It appears that satisfaction with one's financial situation may be important, since the reasons given by Australians for not producing more offspring are often financial (Weston et al.2004). Socioeconomic factors also need to be controlled since income, being employed, and the level of education have also proven to affect both satisfaction with life and fertility (Carmichael and McDonald 2003; Parr 2005; Carroll 2007; Headey et al. 2008).

Rupnarain (2020) postulated that, impoverished families may end up with a variety of children, with explicit challenges that may follow. With limited family resources, large families are less likely to afford education for their children, meaning those kids will likely grow up to have lower earning potential and be more likely to repeat the cycle of poverty (Rupnarain, 2020). According to Jungho (2016), "Educated women generally have fewer children than uneducated women." Jungho further stated that negative relationships like this are strong and vary across both developed and developing countries (measured by Gross Domestic Product per capita) and among women of different educational levels. This is not alarming, since countries vary in their different institutional aspects, including education quality. Furthermore, different educational levels have the potential to generate different kinds of incentives. For example, women who are

more educated tend to have better jobs and earn higher incomes, therefore, the loss of income used for childcare would be higher for these women. As a result, women with primary education tend to have 0 to 30% fewer children than women with no education (total fertility rate of 1 to 0.7). Any gap tends to widen as income increases. The researchers then pointed out that women with a high school education tend to have 10–50% fewer children than those with primary education (total fertility rate ratio of 0.9 to 0.5), with gaps that narrow as income increases. It would be useful for policymakers to understand the actions through which female education affects fertility in the contexts in which these outcomes are observed (Jungho, 2016). It is evident in these researches amongst other variables that they have somewhat of an impact on fertility. Some ruled more negatively than others and some positives.

Methods and materials

A correlational web based survey approach was used to obtain data on life satisfaction and fertility among Jamaicans. In this design, the aim is to garner information about objectively collected and analyzed numerical data which is then used ‘to describe, predict or control variables of interest’ (McLeod, 2019). The targeted group was restricted to female citizens of Jamaica (18 years and older) with a population of 1,381,983 (Statistical Institute of Jamaica (STATIN), 2019). This research utilized a sample size of 1075 with a 95% interval and a margin error of 2.989%. A research-team was selected and trained in the science of methods, particularly in data collection and ethics. Before an individual was allowed to collect data from Jamaicans, s/he had to successfully complete a course in ethics from The Global Health Network. Jamaica is divided into 3 counties and 14 parishes, and each research-team member was assigned selected parishes within a county. The counties are Cornwall (Hanover, Saint Elizabeth, Saint James, Trelawny, Westmoreland), Middlesex (Clarendon, Manchester, Saint Ann, Saint Catherine), and Surrey (Kingston, Portland, Saint Andrew, Saint Thomas).

The sampling approach that was employed is the purposive sampling technique. It is a type of non-probability sampling used in qualitative research for the identification and selection of information-rich cases related to the phenomenon of interest (Babbie, 2010; Hair, Black, Babin, et al., 2006; Leedy & Ormond, 2016; Neuman, 2014).

The period of data collection was from September 21 to December 3, 2021. A standardized survey was used as the instrument of data collection. This survey was created using Google forms; it is divided into two (2) sections-Section A comprises of six (6) multiple-choice questions and Section B comprises a life satisfaction scale coined by Diener et al. (1985) consisting of five (5) statements that the participants can choose to strongly agree, agree, slightly agree, neither agree nor disagree, slightly disagree, disagree or strongly disagree. The survey was disseminated to the targeted sample through virtual means (social media platforms such as WhatsApp, Facebook, Instagram, emails, and Google drive) and face-to-face means. These were deemed most appropriate in keeping with the COVID-19 restrictions and limited face-to-face and physical contact. The completed forms were received instantly as they were submitted by a participant via Google forms. The received data was then converted from Google forms into Statistical Packages for the Social Sciences (SPSS) for Windows; Version 25.0. The collected data was analyzed using the analysis technique. This technique allows for various analytical

methods to be used to generate findings (Parveen and Showkat, 2017). The data were presented using bar graphs and tables to expose the trends identified.

All the participants were given the exact statements/questions on the survey to respond to. The items on the survey were designed to restrict the possible responses so as to keep the study in a controlled span. As an introductory statement on the survey, all participants were informed about the purpose of the research. The researchers also used a non-coercive tone in outlining the guidelines for completing the questionnaire. The other ethical considerations were the maintenance of anonymity of the participants and the participants' involvement was free of choice; they were not cajoled in any way. The validity and reliability of research related to its ability to measure what it was set out to measure and to do this with accuracy and consistency respectively. In this research, the consistency of the survey promoted its validity and reliability and this was done by way of confirmatory factor analysis (Kraiser, 1958, 1960, 1970, 1974; Horn, 1965; Marsden, 2013; Tabachnick & Fidell, 1998, 2007; Brillinger, Preisler, et al., 2004; See Appendix).

The term fertility denotes the capability of humans to produce offspring by way of reproduction (Graham, 2021; van Dalen & Henkens, 2021; Weeks, 2016). For this study, fertility refers to the number of children that is born to a woman during her lifetime, which is based at the time of this study. According to Veenhoven (1996), "Life satisfaction is the degree to which a person positively evaluates the overall quality of his/her life as a whole. In other words, how much the person likes the life he/she leads" (p. 6), which is used for this study. This concept is assessed based on the life satisfaction scale developed by Diener and colleagues (1985), and validated by others (Pavot & Diener, 2008; Pavot, Diener, Colvin, & Sandvik, 1991) as well as the current study by way of factor analysis (see Appendix).

Findings

Table 1 presents the demographic characteristics of the sampled respondents (n=1070). Majority (46.4%) of the respondents falls between the age range of 18-27 and 61.0 % of the respondents are single with majority (63.1%) at the tertiary educational level. The findings revealed that 43.3% of the respondents believed that having children is very important and 39.9% of the respondents are moderately satisfied with life.

Table 1. Demographic characteristics of the sampled respondents, n=1070

Details	% (n)
Age group	
18-27 years	46.4 (496)
28-37 years	25.9 (277)
38-47 years	16.4 (175)
48- 57 years	7.9 (84)
58+ years	3.6 (38)
Marital Status	
Single	61.0 (653)
Married	23.2 (248)

Divorced	3.3 (35)
Common law	11.1 (119)
Widowed	1.4 (15)
Educational Level	
Primary	2.9 (31)
Secondary	22.5 (239)
Tertiary	63.1 (670)
Vocational skill	11.4 (121)
Area of residence	
Cornwall (Hanover, St. Elizabeth, St. James, Trelawny, Westmoreland)	20.4 (218)
Middlesex (Clarendon, Manchester, St. Ann, St. Catherine, St. Mary)	51.5 (551)
Surrey (Kingston, St. Andrew, St. Thomas, Portland)	28.1 (301)

Table 2 below depicts fertility and important of offspring production of the sampled respondents, n=1070. Majority of the respondents 527 (49.3%) did not have children, while 394 (36.8%) had 1-2 children, 124 (11.6%) had 3-4 children, 1.3% had 5-7 children and only 1% had 7 and above children. Table 2 further reveals that, majority of the respondents 527 (43.3%) believed offspring production is very important, 343 (32.1%) believed it is important, 171 (16.0%) it is slightly important, and 93 (8.7%) believed it is not important.

Table 2. The fertility and importance of offspring production, n=1070

Details	% (n)
Number of Child/Children	
0	49.3 (527)
1-2	36.8 (394)
3-4	11.6 (124)
5-6	1.3 (14)
7+	1.0 (11)
Importance of Offspring Production	
0 Not important	8.7 (93)
1-3 Slightly important	16.0 (171)
4-6 Important	32.1 (343)
7-10 Very important	43.3 (463)

Table 3 presents the descriptive statistics for the life satisfaction of Jamaicans. The mean life satisfaction of Jamaicans was 16.7766 ± 6.44873 , 95% CI: 16.3898 to 17.1635 out of a maximum of 35.0. It can be deduced from the descriptive statistics that on average Jamaicans have a moderate life satisfaction, with the state ranging from low to very high. The rating of life satisfaction among Jamaicans is depicted in Figure 1.

Table 3.Descriptive Statistics for Life Satisfaction Scale

Detail		Statistic	Std. Error
Mean		16.7766	.19714
95% Confidence Interval	Lower Bound	16.3898	
	Upper Bound	17.1635	
5% Trimmed Mean		16.5431	
Median		16.0000	
Variance		41.586	
Std. Deviation		6.44873	
Minimum		5.00	
Maximum		35.00	
Range		30.00	
Interquartile Range		9.00	
Skewness		0.564	0.075
Kurtosis		-0.176	0.149

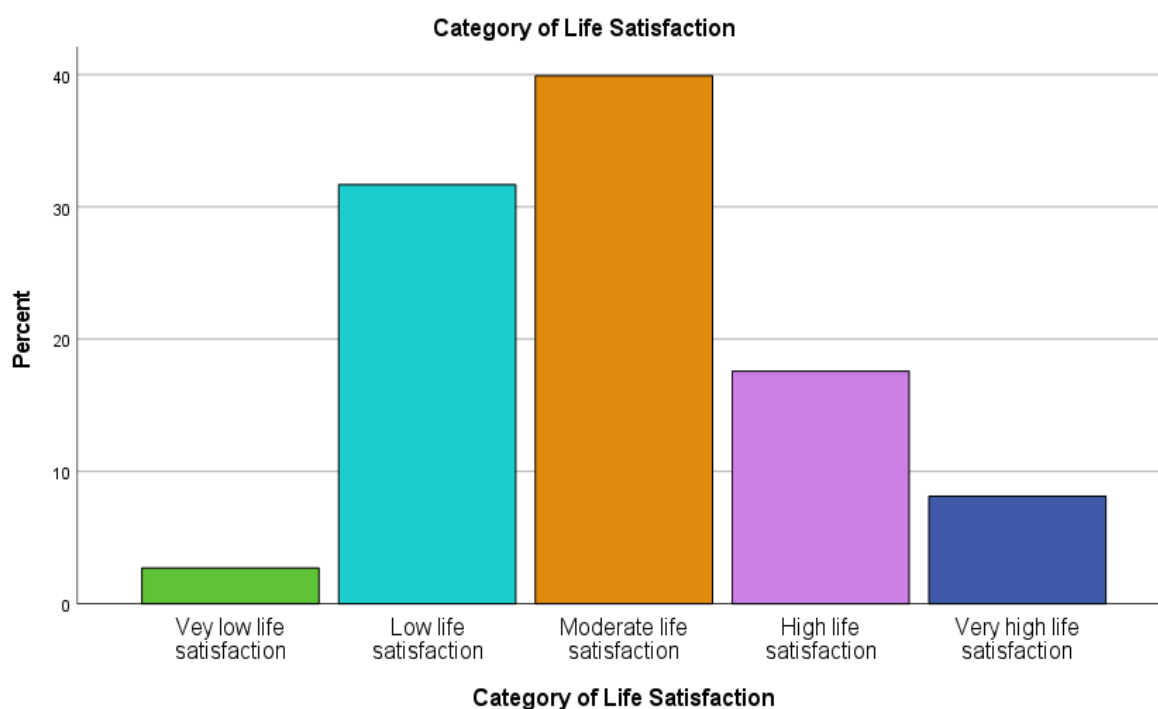


Figure 1.Category of life satisfaction

Figure 4 below represents a bar graph of the different category of life satisfaction in percentage, with 39.9% of the respondents are moderately satisfied with life, 32% low life satisfaction, 18% high life satisfaction, 8 % very high life satisfaction and 2 % with very low life satisfaction.

Table 5 below depicts a cross-tabulation between ‘number of child/children’ and ‘category of life satisfaction.’ The findings reveal that there is a statistical association between the two variables (χ^2 critical = 28.845 < χ^2 obtained = 70.385, $P < 0.001$ Hence, we reject the null hypothesis and accept the alternative hypothesis).

Table 5 Cross-tabulation between number of children and category of life satisfaction

Details	Category of Life Satisfaction					Total	χ^2 , P value
	Very low life satisfaction	Low life satisfaction	Moderate life satisfaction	High life satisfaction	Very high life satisfaction		
Number of Child/ Children	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	70.385, <0.001
0	24.1 (7)	37.2 (126)	51.8 (221)	61.7 (116)	65.5 (57)	49.3 (527)	
1-2	41.4 (12)	45.1 (153)	35.1 (150)	29.8 (56)	26.4 (23)	36.8 (394)	
3-4	31.0 (9)	15.3 (52)	11.2 (48)	6.9 (13)	2.3 (2)	11.6 (124)	
5-6	3.4 (1)	0.9 (3)	1.4 (6)	1.1 (2)	2.3 (2)	1.3 (14)	
7+	0.0 (0)	1.5 (5)	0.5 (2)	0.5 (1)	3.4 (3)	1.0 (11)	

Limitations of the Study

The study had a limitations that could possibly affect the findings of the study in one way or another. A limitation of the study was that 46.4% of the respondents fell within the age range of 18-27. Such a disproportionate number of respondents from one age group could definitely skew the results of the research and not allow for an accurate general inference being made to the wider Jamaican population at large.

Discussion

The coverage to which the issue of being satisfied with life impacts fertility levels has received little to no studious attention and has never been previously addressed in Jamaica. This research investigates whether life satisfaction brings about a higher likelihood or decision making of childbearing amongst Jamaicans. The basis of the study lies in providing new, solid, robust evidence of the relationship between life satisfaction and fertility. In evaluating the relationship between the two variables, the life satisfaction scale by Diener and colleagues (1985) was used. In measuring the construct among Jamaicans, the researchers before using the life satisfaction scale examined it for its suitability and appropriateness. The five item scale was good for assessing life satisfaction among Jamaicans (Cronbach Alpha = 0.845). Using confirmatory factor analysis, it was concluded that the five item scale is appropriate and useful for assessing life satisfaction among Jamaicans (Kaiser-Meyer-Olkin Measure of Sampling Adequacy= 0.841, P=0.0001; see Appendix).

According to Mencarini, Vignoli, Zeydanli, & Kim (2018), they indicated that in some countries, relatively higher levels of life satisfaction do, indeed, foster reproductive behavior (see also, Conzo, Fuochi, & Mencarini, 2017). The fact that higher levels of perceptive personal happiness are associated with a higher chance of having children in all countries suggests that life

satisfaction favors reproduction. For this current research, the researchers found that, there is a relatively lower level of very low life satisfaction among women who have children than those who have had at most 2 children. This means that life satisfaction favour women with children, which concurs with literature (Conzo, Fuochi, & Mencarini, 2017; Mencarini, Vignoli, Zeydanli, and Kim, 2018).

Mencarini, Vignoli, Zeydanli, & Kim (2018) further explained that childbearing tends to be attempted only in coexistence with stability and life satisfaction. However, this research differs as the findings show that 45.1% of the respondents that have either 1-2 children have a low life satisfaction, which means that childbearing is not only attempted on the foundation of stability and high levels of life satisfaction. Senior Gleaner writer, Erica Virtue reported that “more than three decades after the National Family Planning Board (NFPB) launched its 'Two is Better Than Too Many' campaign to promote responsible parenting, some Jamaican women continue to give birth to children they cannot support” (Virtue, 2012). This goes to show that regardless of socioeconomic status people with instability and low life satisfaction are still producing offspring even more than those with a higher level of life satisfaction (See Table 5 in findings for reference).

According to Glass, Simon, & Andersson, 2016 a study examining cross-national variation in the relationship between parenthood and life satisfaction revealed substantiating evidence of low levels of happiness among parents than nonparents in more advanced countries. This research started out with one of the hypotheses that people with high levels of satisfaction are more likely to have children among Jamaicans. However, while analyzing the data, the findings revealed that women with high levels of satisfaction are less likely to have children among Jamaicans. As seen in the findings in Table 5 where 65.5% of the respondents that did not have a child have a very high level of life satisfaction and 61.7% of the respondents that do not have children have a high level of life satisfaction. Based on the findings above, the researchers are in full agreement with the statement “Educated women generally have fewer children than uneducated women” by Kim (2018). To further support this statement the findings revealed that 26.4% of the women that have very high life satisfaction has 1-2 children compared to the 31.0% of women with low life satisfaction that has 3-4 children. This is further proven in an article by Tran, Pham, & Nguyen (2021), that “higher education levels lead to a higher level of eudaemonic well-being” (Tran, Pham, & Nguyen, 2021).

One noteworthy finding that although it slightly deviated somewhat from the proposed hypotheses is explained as follows, from the data collected, it was discovered that 46.4% of the respondents fell within the age range of 18-27, of this total, 43.3% of the respondents stated that childbearing is very important. This reveals that the younger generation are desirous of producing offspring. The continuity of the human species is evident in this finding. According to the population data for Jamaica the current population 2021 is 2,980,164 (Jamaica Population, 2021) which is an increase from where it was in 2011, 2,697, 983 (Statin, 2021). This shows an increase within a ten-year margin of 282, 181 added to the population. This is proven with statistical findings that reported the fertility rate at 20-24 years for Jamaica was 100.85 births per 1000 women & at 25-29 years was 106.57 births per 1000 women for the year 2020 (Knoema, 2020). While compared to other age categories these age groups produce the highest fertility rate.

Whilst this finding might be true, the researchers are cognizant of the fact that participants within this age group could be this large because of the method of data collection. The data was collected using the electronic means via social media. The age group that falls within “igen” (1995-2012) 18-39 years would be more gravitated to this method as opposed to the “Generation X” (1965-1979) 40-61 years (Understand Generational Differences: Guidelines and Resources, 2021). The method of data collection inadvertently favored one age range of the sample. Although this limitation favored that age range, it produced substantiating evidence to justify that the Jamaican population has the potential for continuity of the population growth. These young people classify childbearing as very important.

To conclude, this study has empirically established that life satisfaction does influence the decision to have children among Jamaicans and people with high levels of satisfaction are less likely to have children amongst Jamaicans. This proposed that the prognosis for the Jamaican future looks precipitous as the poorer and unsatisfied class are producing offspring. In which, they might not be able to effectively cater to their needs and provide them with a desirable future to be positive contributors to society. On the other hand, those with higher socioeconomic status and life satisfaction are those with the resources to care for children, but they are not proactive in procreation.

Recommendations

Based on the findings of the research carried out, the researchers would like to make the following recommendations: The first recommendation we believe needs to be done, is for the government to possibly implement a policy to educate the poorer class on the benefits of not having too many children. This being the case as they cannot properly take care of these children and they become a burden to society and contribute to the increasing crime rate of the country.

Another recommendation that could assist in alleviating the poverty level of the country is by educating all citizens regarding the Vision 2030 mandate. By making individuals more aware of this important milestone to be achieved, we believe that persons would become more responsible in their sexual behaviour and not produce unwanted off-spring.

A third recommendation that is of vital importance, is for all politicians to break off their ties to drug dons and garrison communities where people are kept dependent on them for their livelihoods and produce off-spring to maintain the status quo of voting the same way no matter what the circumstances are in those communities.

Fourthly, further study to be done that include more variables of socioeconomic characteristics such as income to be able to establish the effect of social economic status and life satisfaction and fecundity.

References

Babbie, E. (2010). *The Practice of Social Research* 12th Edition. Wadsworth, a Division of Thomson Learning, Inc.

- Brillinger, D. R., H. K. Preisler, et al. (2004). An exploratory data analysis (EDA) of the paths of moving animals. *Journal of Statistical Planning and Inference* 122: 43-60.
- Celestine, N. (2021, 09 14). *What is Affective Forecasting? Definition + Daniel Gilbert's Work*. Retrieved October 16, 2021, from Positive Psychology: <https://positivepsychology.com/affective-forecasting/>.
- Conzo, P., Fuochi, G., & Mencarini, L. (2017). Fertility and Life Satisfaction in Rural Ethiopia. *Demography*, 54(4), 1331–1351. <http://www.jstor.org/stable/45047298>.
- Glass, J., Simon, R. W., & Andersson, M. A. (2016, November). *Parenthood and Happiness: Effects of Work-Family Reconciliation Policies in 22 OECD Countries*. Retrieved December 18, 2021, from American Journal of Sociology: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5222535/>.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Graham. E. (2021). Theory and explanation in demography: The case of low fertility in Europe. *Population Studies*, 75:sup1, 133-155. DOI: 10.1080/00324728.2021.1971742
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2006). *Multivariate data analysis* (6th Ed.). Pearson Education International, Upper Saddle River.
- Hansen, T., Slagsvold, B., & Moum, T. (2012). Childlessness and Psychological Well-Being in Midlife and Old Age: An Examination of Parental Status Effects Across a Range of Outcomes. *Springer Link*.
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, 30, 179-185.
- Knoema. (2020). *Jamaica - Age-specific fertility rates 20-24 years*. Retrieved December 18, 2021, from Knoema: <https://knoema.com/atlas/Jamaica/topics/Demographics/Fertility/Fertility-rates-at-age-20-24-years>.
- Jungho, K. (2016). Female education and its impact on fertility. Retrieved 12 December 2021, from <https://wol.iza.org/uploads/articles/228/pdfs/female-education-and-its-impact-on-fertility.pdf>.
- Kaiser, H. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement* 20: 141-151.
- Kaiser, H. F. (1970). A Second-Generation Little Jiffy. *Psychometrika* 35(4): 401-415.
- Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39, 31-36.
- Kraiser, H. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika* 23: 187-200.
- Leedy, P.A. & Ormrod, J.E. (2016). *Practical research: Planning and design, 11th edition*. Boston: Pearson.
- Mencarini, L., Vignoli, D., Zeydanli, T., & Kim, J. (2018). *Life satisfaction favors reproduction. The universal positive effect of life satisfaction on childbearing in contemporary low fertility countries*. (E. Manalo, Editor, & P. ONE, Producer) Retrieved October 16, 2020, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6281189/>.

- Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches*, 7th ed. New York: Pearson/Allyn and Bacon.
- Nick Parr .(2010). *Life satisfaction favors reproduction. The universal positive effect of life satisfaction on childbearing in contemporary low fertility countries*, Retrieved December 3,2021, from <https://pdfs.semanticscholar.org/67ad/8d8ef758476d279d21dbde93472097987852.pdf>.
- Pavot, W., & Diener, E. (2008). The Satisfaction With Life Scale and the emerging construct of life satisfaction. *Journal of Positive Psychology*, 3, 137-152.
- Pavot, W. G., Diener, E., Colvin, C. R., & Sandvik, E. (1991). Further validation of the Satisfaction with Life Scale: Evidence for the cross-method convergence of well-being measures. *Journal of Personality Assessment*, 57, 149-161.
- Rupnarain, K. (2020). Why do the poor have large families? Retrieved 10 December 2021, from <https://www.worldvision.ca/stories/why-do-the-poor-have-large-families>
- Sousa, L., & Lyubomirsky, S. (2001, 01). *Life satisfaction*. Retrieved September 2021, from Research Gate: https://www.researchgate.net/publication/284318649_Life_satisfaction.
- Statistical Institute of Jamaica. (2019). Population statistics. https://statinja.gov.jm/Demo_SocialStats/PopulationStats.aspx.
- Tabachnick, B. G. & Fidell, L. S. (2007). *Using multivariate statistics*: Chicago: University of Chicago Press.
- Tabachnick, BG & Fidell, LS. (1996). *Using Multivariate Statistics* (3rd Edn), Harper Collins: Northbridge, California.
- Van Dalen, H.P. &Henkens, K. (2021). When is fertility too low or too high? Population policy preferences of demographers around the world. *Population Studies*, 75:2, 289-303, DOI: 10.1080/00324728.2020.1784986.
- Virtue, E. (2012, August 26). *Birthing poverty: Is two still better than too many?* Retrieved December 17, 2021, from The Gleaner: <https://jamaica-gleaner.com/gleaner/20120826/lead/lead2.html>.
- Veenhoven, R. (1996). *The study of life-satisfaction*. Eötvös University Press. Retrieved from <http://hdl.handle.net/1765/16311>
- Walsh, B. S., Parratt, S. R., Hoffmann, A. A., Atkinson, D., Snook, R. R., Bretman, A., et al. (2018). *Trends in evolution and ecology*. Retrieved September 09, 2021, from The Impact of Climate Change on Fertility: https://www.researchgate.net/publication/329504826_The_Impact_of_Climate_Change_on_Fertility.
- Weeks, J.R. (2016). *Population: An Introduction to Concepts and Issues*, 12 edition. Massachusetts: Cengage Learning.
- Wilson, T. D., & Gilbert, D. T. (2001). *Affective forecasting*. Retrieved October 16, 2020, from <http://wjh-www.harvard.edu/~dtg/Wilson%20&%20Gilbert%20%28Advances%29.pdf>.

Appendix: Exploratory Factor Analysis of Life Satisfaction Scale

The table below displays Descriptive Statistics for the Life Satisfaction Scale

	Mean	Std Deviation	N
7. In most ways, my life is close to my ideal.	3.16	1.589	1070
8. The conditions of my life are excellent.	3.21	1.556	1070
9. I am satisfied with my life.	3.07	1.556	1070
10. So far I have gotten the important things I want in life.	3.39	1.645	1070
11. If I could live my life over, I would change almost nothing.	3.95	1.842	1070

Displays the Correlation Matrix for the Life Satisfaction Scale

	7. In most ways, my life is close to my ideal.	8. The conditions of my life are excellent.	9. I am satisfied with my life.	10. So far I have gotten the important things I want in life.	11. If I could live my life over, I would change almost nothing.
7. In most ways, my life is close to my ideal.	1.000	0.683	0.606	0.541	0.395
8. The conditions of my life are excellent.	0.683	1.000	0.721	0.574	0.384
9. I am satisfied with my life.	0.606	0.721	1.000	0.617	0.401
10. So far I have gotten the important things I want in life.	0.541	0.574	0.617	1.000	0.415
11. If I could live my life over, I would change almost nothing.	0.395	0.384	0.401	0.415	1.000

The table below represents the KMO and Bartlett's Test done for the Life Satisfaction Scale

Kaiser-Meyer-Olkin Measure of Sampling Adequacy. 0.841		
Bartlett's Test of Sphericity	Approx. Chi-Square	2391.593
	df	10
	P value	0.0001

The table below represents the Communalities findings done for the Life Satisfaction Scale.

Details	Initial	Extraction
7. In most ways, my life is close to my ideal.	1.000	0.676
8. The conditions of my life are excellent.	1.000	0.746
9. I am satisfied with my life.	1.000	0.735
10. So far I have gotten the important things I want in life.	1.000	0.633
11. If I could live my life over, I would change almost nothing.	1.000	0.377

Component	Total	Initial Eigen values % of Variance	Cumulative %	Extraction Sums of Squared		
				Total	Loadings % of Variance	Cumulative %
1	3.167	63.345	63.345	3.167	63.345	63.345
2	0.716	14.325	77.67			
3	0.479	9.585	87.255			
4	0.381	7.613	94.867			
5	0.257	5.133	100			

The table below depicts the Total Variance Explained done for the Life Satisfaction Scale.

The table below represents the Component Matrix for the Life Satisfaction Scale.

Details	Component
7. In most ways, my life is close to my ideal.	1
8. The conditions of my life are excellent.	0.822
9. I am satisfied with my life.	0.864
10. So far I have gotten the important things I want in life.	0.857
11. If I could live my life over, I would change almost nothing.	0.796

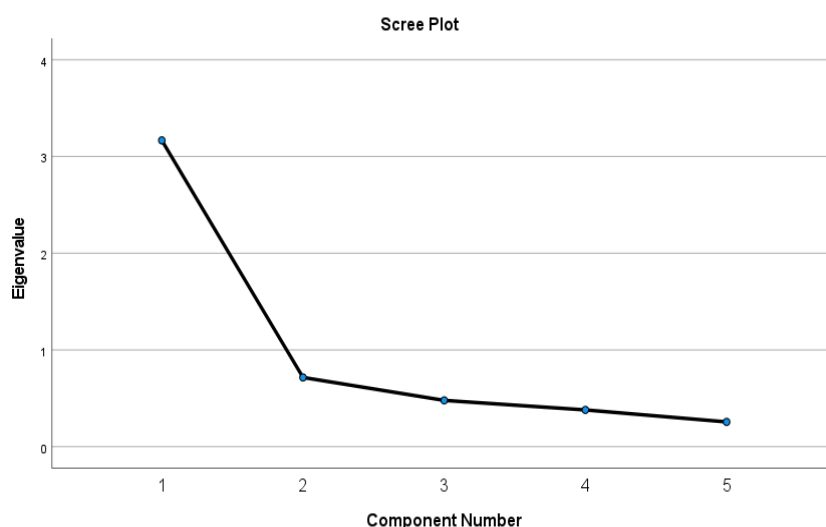


Figure The diagram above depicts the Scree plotting of the Life Satisfaction Scale to determine the number of factors to retain in an exploratory factor analysis.