TIME SERIES ANALYSIS ON MARRIAGE REGISTRATION IN ILORIN, KWARA STATE
(A CASE STUDY OF MARRIAGE, REGISTRY OF SOCIAL WELFARE, ILORIN)

BY

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BEING A RESEARCH WORK SUBMITTED TO THE DEPARTMENT OF STATISTICS, INSTITUTE OF APPLIED SCIENCES, KWARA STATE POLYTECHNIC, ILORIN

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CERTIFICATION

This is to certify that this project has been read and approved as meeting part of the academic requirement for the award of National Diploma in Statistics, Kwara State Polytechnic Ilorin.

_____   _____

SAFIHI, F. G.   **DATE**
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_____   _____

EXTERNAL EXAMINER   **DATE**

DEDICATION

This project is dedicated to Almighty Allah for sparing my lives throughout this course of study. Also this dedication goes to my parents who have been there for me, in terms of moral and financial support.

ACKNOWLEDGEMENTS

First and foremost, I give all glory and thanks to the Almighty God for granting me the strength, wisdom, and good health to successfully carry out this project.

I express my sincere appreciation to my project supervisor, Mr. Safihi F.G, for his valuable guidance, encouragement, and support throughout the course of this research. His insightful suggestions and corrections contributed greatly to the success of this work.

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To my amazing friends, Temitope and Omowumi, thank you for always being there for me — your encouragement, friendship, and support meant a lot during this period.

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Finally, I extend my thanks to everyone who contributed, in one way or another, to the completion of this project. I am truly grateful.

ABSTRACT

The study examined time series analysis on marriage registration in Ilorin, Kwara State between 2020 – 2023). The data used was collected from marriage registry, ministry of social welfare, Ilorin, Kwara State. Moving average, simple linear regression was used for the analysis. The result on trend value clearly show that, there is a steady decrease in the number of marriages from second half of the year 2020 up to January 2023, and from there, there was a shape increase in the number of marriages. Also, trend of marriage contains seasonal variation, which have been smoothing by moving average method. Thus, the trend value appears to follow almost identical patterns during the corresponding month of the successive years. This indicated that Christmas and New Year festivals have influence on marriage as it can be seen on the trend values.

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CHAPTER ONE

1.0   INTRODUCTION

Marriage according to Collins dictionary simply defines marriage as "The state or relationship of being husband and wife or a contact made by man and woman to live as husband and wife" The Christian understanding of marriage goes deeper than the definition given above it look at marriage as a convenient. The matrimonial covenant by which a man and a woman establish between themselves.

While marriage in islamic perspective is viewed as the method chosen Allah for protection, multiplicity and continuity of life after each of the spouse have been adequately prepared by Allah in discharging positively the marital responsibilities. Also according to legal perspective, marriage is universally accepted to be a union of man and woman, that is, union of persons of opposite sex.

Marriage is founded on and governed by the social and religions norms of the society. The history of marriage can be traced back to the documents of second vacation council (GaudiumetSpes) on the subject of holiness of marriage and the family that states that "the intimate partnership of life and the love which constitute the marriage state has been establish by the creator and endowed by him with its own laws, it rooted in a contract of the partner".

Marriage can be defined psychologically as a contract enter into by two adults of opposite sex to live together has husband and wife until death do them apart.

In other words, marriage could be defined as marital union between a man and a woman.

1.1   TYPES OF MARRIAGE

There are three major types of marriages namely,

i.   **CHRISTIAN MARRIAGE**: Is a marriage conducted by an ordained person (priest, Reverend, Pastor etc) couples getting married under Christianity have agreed to live by the doctrine of the holy bible. In Christian marriage polygamy is allowed, but the number of wife they can married is stipulated. This can be traced in the old testament which states that "the polygamy of Patriarchs and kings is not yet explicitly rejected".

ii.   **ISLAMIC MARRIAGE**: Are performed according to the laws of Islam. It can be carried out by an alpha, Imam or Muslim scholar in a mosque or in a private home. Therefore, Muhammad (S.A.W) came while the practice of polygamy was coming and deeply rooted in the social life. The Quran did not ignore the practice or discard its, nor its let it continued unchecked or unrestricted. The benevolent intervention of the Quran permits a maximum of four wives in which equality among the wives in the treatment, provisions and kindness must be fulfilled.

iii.   **CUSTOMARY OR TRADITIONAL MARRIAGE**: This was method of marriage used before of arrival of the colonial master and the foreigners that brought Christianity, Islam and other religions. The traditional or customary obligation required in the olden days kola nut, yam tubers,

honey, sugar cane, cloths and various other things which might include physical cash to be taking to the family of bride (wife).

It is after the traditional ceremony that other ceremonies follow which might include going to marriage registry announce their intention to get married legally. In customary marriage one man can marry many wives and the actual number is not stated in any text. But in the olden days, our forefathers who were mostly farmers married many wives and have many children to assist them in their farming activities.

LEGAL MARRIAGE: Legal marriage is the marriage that is carried out accordance with the provision of the laws that applies to marriage in Nigeria which is called the married act. One wife is permitted in legal marriage. This can be find in section 370 of the criminal code which reads. "any person who, having a husband or wife living marries in any case in which such marriage is avoid by reason of it taking place during the life such husband or wife is guilty of a felony, and liable to imprisonment for seven years".

Therefore, this study is interested in the legal marriage due to the fact that the available data in the registry is base on legal marriage.

1.2   HISTORICAL BACKGROUND OF MARRIAGE REGISTRY

It on record that the history of marriage registry can dated back to 1863 when the first ordinance dealing with legal marriage was enacted. The provision of this ordinance are traceable to the colonial master in their colonies of Nigeria was one.

Thus, since the adoption of the law from it introduction to the amendments through the review of the law principles itself by the law makers in the independence Federal Republic of Nigeria so as to suit its citizens in order to make it practicable.

The amendment of the marriage act according to the constitution gave birth to legal marriage which is described in law as union between husband and wife to exclusion of others.

In Nigeria today, in realization of meaningful planning and development, the authority has conferred the power to solidify marriage union on the various marriage registries in the States and local government areas since 1999 to

1)	Undertake the registration of marriage

2)	Advise the waitresses from both side of the couples on their roles in order to make the family a happy union

3)	Issuance of marriage certificate to the couples

4)	Disseminate information and educate the general public about the activities of the registry.

5)	Provide information on marriage statistics

## 1.3	STATEMENT OF PROBLEMS

The problems facing the marriage registry since its constitution are not farfetched. These problems are

1)	Inadequate record: this simply mean that record were kept, but it is not properly and efficiently kept as it is expected.

2)   Orientation and enlightment is lacking as regard to marriage registration.

3)   In the state, there is crises between the ministry of local government and ministry of social welfare on the issue of who is rightful constituted body to carry out the registration exercise hence its hindering the prosperity of the work.

Therefore, this study is interested in the actual fact on ground. To see how people have been patronizing the registry for marriage to show us the available data for further statistical analysis.

1.3   AIM AND OBJECTIVES OF THE STUDY

(i)To determine the relationship between the number of marriages and times

(ii)To check whether Christmas and New Year festivals have influence on marriage.

(iii)To predict for further marriages.

1.5   SIGNIFICANT OF THE STUDY

The study will provide useful information for effective social and economics planning process for both governmental and non-governmental organization by using the result of the findings such as the knowledge of relationship between the number of marriage and time and the predicted future marriages.

1.6   SCOPE AND LIMITATION OF THE STUDY

Due to the short period of time and resources to carryout this research, the

scope of the study was limited to registry marriage, ministry of social welfare, Ilorin, Kwara State.

Marriage registration was fully started throughout the states and local government areas of the Federation in 1999 by marriage registries.

Ministry of social welfare, marriage registry, Ilorin happens to be one of the registries selected for the project in Kwara State as at that year, hence, the study would be for twelve years (2020 – 2023).

1.7   PROBLEMS ENCOUNTERED

To embark on a survey study of this nature was never an easy task. The data I used was collected from marriage registry, ministry of social welfare, Ilorin. Hence I have problem in obtaining my data due to inadequate records kept.

Moreso, I have to adjust to their convenient time before I could collect required data, hence it cost me in terms of money and time.

CHAPTER TWO

2.0   LITERATURE REVIEW

2.1   INTRODUCTION:

A vital statistics system is the legal registration of statistical recording and reporting of the occurrence of the collections, compilation analysis pertaining to vital census events which in turn include the births, deaths, marriages, divorces, adoption, legitimating, recognition, annulments, and legal Separations.

The effective design and successful implementation of programmes that target the transition to marriage has been limited in the family life education field. Some researchers have called for more of a family life education focus on newlyweds. In order to expand our understanding of this important transition, in review of the existing literature on the transition to marriage would a significant contribution to family life researchers and educators. The   present article synthesizes the available information that is germane to our understanding of the transition to marriage by highlighting the salient intrapersonal, interpersonal, familial, and social developmental issues facing couples making the marital transition in order to conduct future research and design relevant family life education curricular.

Surprisingly, there is limited data on a couple first years of marriage, couples preparation and readiness for marriage (Holman and Li, 1997; Larson and Holman, 1994), and how couples relationships change as they progress through courtship and into marriage (Huston, McHale, and Crouter, 1986; Huston, Surra,

Fitzgarald, and Cate, 1981). Thus, the design and successful of implementation of programmes that target newlywed couples have been lacking in the family life education field, although some researchers have called for more family life education focus newlyweds (Mace, 1982).

There is a burgeoning body of literature discussing families in relation to their developmental phase, and in referring to marriage in developmental terms (Carter and McGoldrick, 1989). The family life cycle perspectives addresses the nodal events related to the ongoing structural entrances and exists of family members using a frame work of developmental transitional periods (Carter, McGoldrick; Duvall, 1971; Hill and Rodgers, 1964). A transition is defined as the passage from one ending states to another beginning to another beginning state (Bridges, 1980). Although many family life cycle transitions like the onset to marriage, parenting, and retirement are normative and anticipated, previous researchers have suggested that the individual and family system can still experience a great amount of stress and difficulty in managing these transitions (Carter and McGoldrick; Hadley, Jacob, Milliones, Caplan, and Spitz, 1974).

Marriage qualifies as a life cycle transition that is both normative and anticipated, and yet, has the potential to be highly stressfull (Boss, 1988). According to McGoldrick (1989), becoming a couple is one of the most complex and difficult transitions of the family life cycle even thought it is often perceived as the least complicated and most joyous.

This romanticized view of the transition to marriage may contribute to a

couple's lack of adequate preparation and subsequent difficulty and distress during the transition. Many people consider marriage as the unimpeded, blissful joining of two individuals. However, Carter and McGoldrick (1989) have suggested that marriage really represent the merger of two entire systems combining together in developing a new, third family system.

Botwin, Buss, and Shakelford (1997) and Holman and Li (1997) reported that newlyweds personalities do play an important role in the courtship/mating process with marriage partners selecting mates with similar personality characteristics to their own ideals. Similarly allows for more familiar patterns of communications, empathy, and understanding (Antill, 1983, Buss, 1984, Kurdek and Smith, 1987, Lesnick-oberstein and Cohen, 1984). Cate and Lloyd (1992) found that individuals who were psychologically health (i.e. omotionally stable) were more likely to be maritally satisfied than those individuals who were psychologically unhealthy. Kurdek (1991) stated that discrepancies in reported personality scores of newlyweds influenced their reported level of marital quality. Holden (1991) indicated that personality priority that were almost exclusively complimentary (i.e. ,opposite) rather that symmetrical (i.e., similar) related to the subsequent pursuit of marital therapy of couples.

Kim, Martin, and Mardn (1989) and Levine and Hennessy (1990) found that personality factor differentiated stable from unstable marriages. Stable were more similar in intelligence, pretension, radicalism, tendermindedness, mutual trust, acceptance, enthuisiasm, and genuineness. Personality factors that reduce the

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likelihood of stability and satisfaction have included the lack of warinth and extraversion (Levine and Henessy), passive aggression (slavik, Carlson, and Sperry, 1998), borderline pathologies(begin and Braverman, 1995), bipolar disorders (Peven and Schulman, 1998(, feeding of insecurity, unfairness, depreciation and powerless (Begin, Sabourin ,Lussier and wright, 1997), disagreeable, emotional instability, inconsiderateness, and physical abuse (Botwinetul, 1997, Kosek 1996, Shackelford and Buss, 1997: Vargha, 1992 -1993): chemical abuse (Leonard and Jacob, 1988), depression (Cohan and Bradbury, 1997, Davila and Bradbury, 1997, Fals-stewart, Birchler, Schafer, and Lucente, 1994, Katz, Beach, Smith, and Myers, 1997), neuroticism (Karney and Bradbury, 1997, Russell and wells, 1994a, Russell and wells, 1994b), tension, anxiety, worry, and suspiciou (Craig and Olson, 1995), hostility, defensiveness, and aggression (Heyman, O'Leary, and Jouriles, 1995, O'Leary, Malone, and Tyree 1994, Newton, Kiecolt-Glaser, and Malarkey, 1995), and negative affectivity leading to negative attributions (Huston and Vangelistic, 1991, Karney, Bradbury, Fincham, and O'Sullivan, 1994).

CHAPTER THREE

METHODOLOGY AND DATA PRESENTATION

3.0   INTRODUCTION

This chapter deals with the methodology and type of data presentation use in the study. As statistical investigation of phenomenon always begin with collection of a data. Inadequate and in-accurate data application of statistical techniques can not fetch or give a good and accepted result which will lead to sound decision and conclusion n a given problem.

3.1   SOURCES OF DATA

There are two types of data, namely the primary and secondary data.

PRIMARY DATA

This refers to the data collected from the original or direct source from an objects of interest. It is often a product of personal study undertaking by an individual or organization.

SECONDARY DATA

This refers to data obtained and use for a purpose for which it is collected. Such data could be obtained from other person, a body or even government establishment.

In this study, secondary data are employed. The data used extracted from already complied data of ministry of social welfare.

3.2   PRESENTATION OF DATA

The type of presentation of data used in this project work is:

1. **TABULAR PRESENTATION**

A table is an orderly form of layout, which contains rows and columns. Tabulation is the columns for easy understanding.

TABLE 3.1

NUMBER OF MARRIAGE RECORDED IN KWARA STATE REGISTRY BETWEEN 2020-2023.

MONTH/YEAR	2020	2021	2022	2023
Jan	30	5	34	40
Feb	39	19	59	40
Mar	40	32	61	55
Apr	31	19	78	56
May	15	10	35	44
June	20	32	34	24
July	34	42	49	50
Aug	51	60	65	50
Sept	62	59	68	42
Oct	83	72	68	72
Nov	71	82	70	69
Dec	35	12	25	45
Total	511	444	646	587

QUARTERLY MARRIAGES RECORDED IN KWARA STATE BETWEEN 2020-2023

TABLE 3.2

YEAR	QUARTER 1	QUARTER 2	QUARTER 3	QUARTER 4
2020	109	66	147	189
2021	56	61	161	166
2022	154	147	182	163
2023	135	124	142	186

2) GRAPHICAL PRESENTATION

This is a form of presentation statistical information. A graph is a simple and effective way of illustrating and comprehending a table. It gives a practical effect to what would be otherwise be just a mass of figures.

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3) PIE CHARTS

Is the graphical presentation of data in circles, it is the division of circle in to various segments with angle proportional to the value they represented.

Each segment of the circle has an area equal to the quality of items represented.

Fig 3.1

Year

Bar chart showing the number of manage between 2016-2019

TABLE 3.3

Sectors of pie-chart showing number of marriages record

YEAR	FIGURES	ANGLE OF SECTOR
2020	511	$511/2188 \times 360° = 84.08°$
2021	444	$444/2188 \times 360° = 73.05°$
2022	646	$646/2188 \times 360° = 106.29°$
2023	587	$587/21888 \times 360° = 96.58°$
TOTAL	2188	

PIE CHART SHOWING NUMBER OF MARRIAGES RECORDED FROM 2020-2023 (FIG.3.1)
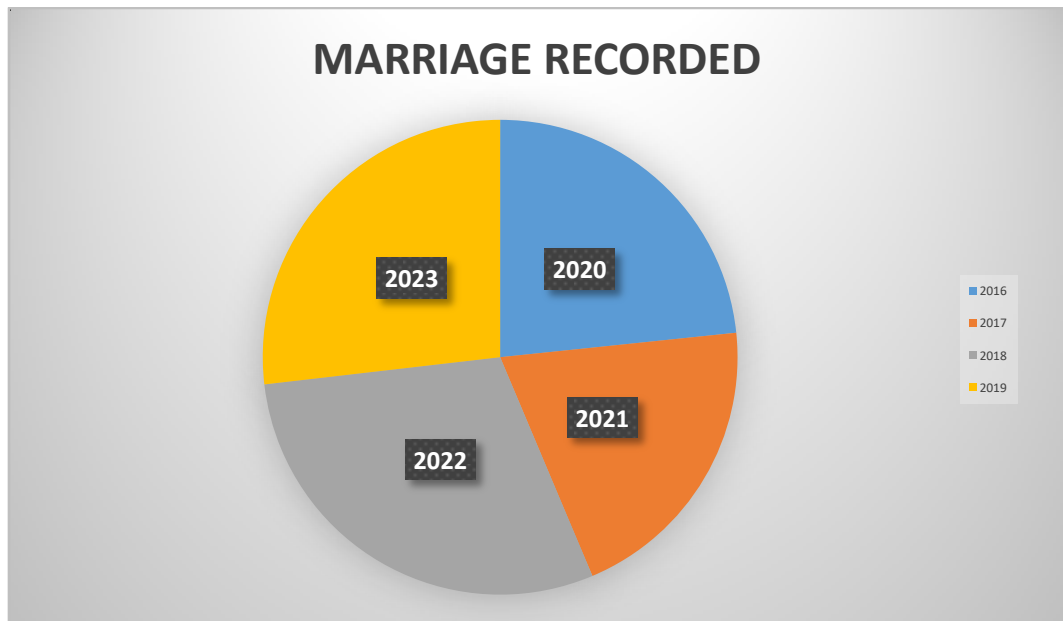
COMMENT

from the below diagram, we can see that in year 2016 we have more or

greater number of people who registered their marriage than the last eleven years this shows that the number of marriage increases steadily from 2016-2019.

3.3   METHOD OF ANALYSIS

3.3.1 TIME SERIES ANALYSIS

Time series is a group of data that have been collected over a specified period of time, usually at equal intervals.

Time series plays a significant role in the analysis of socio economic data. Most data on population, export an import trade and banking are made sequentially with time.

The time may be days, weeks, months, years, decades or even seconds. The most common form of presenting such data is by graph were time is show on X axis and the dependent variable is show on the Y axis.

3.3.2 COMPONENTS OF TIME SERIES

Time series can be broken down into four components, these are:

1. SECULAR (TREND): The general direction in which a trend to follow over time. It may be upward or downward.

2. SEASONAL VARIATION: Is a variation that exhibit similar patterns for corresponding period of successive years.

3. CYCLICAL VARIATION: Is a long time variation that may or may not follow

similar patter over equal interval of time.

4. IRREGULAR VARIATION: This is the sporadic movement of time series due to some random events.

3.4 MODEL USED IN THE ANALYSIS

The models used for the purpose of this study are the two models based on the four components in the time series.

MULTIPLICATIVE MODEL:

$$Y_t = T \times S \times C \times I$$

ADDITIVE MODEL:

$$Y_t = T + S + C + I$$

Where

Y_t is symbolize original data

T   is the trend value

S   is the seasonal

C   is the cyclical

I   is the irregular

These models tends to reduce the degree of variation present in the data and also eliminate unwanted fluctuation.

3.5   METHODS OF ESTIMATING TREND

Moving average method and least square method will be used to estimate trend and predict future marriage.

CHARTER FOUR

DATA ANALYSIS AND INTERPRETATION

DATA ANALYSIS

Analysis of data is an important process during an investigation so as have meaningful interpretation of the data. It is the proper way of summarizing data in such a way that some of its features can be seen for easy interpretation. A data is well presented and analyzed would be easy for any statistician or a layman to interpreted. The analysis for this research work is estimation of trend using additive least square method and this method is used to achieve the desired objectives of the study.

4.1 TABULATION OF DATA

THE BELOW DATA REPRESENTS THE MONTHLY NUMBER OF MARRIAGES RECORDED IN KWARA STATE REGISTRY

MONTH/YEAR	2020	2021	2022	2023
Jan	30	5	34	40
Feb	39	19	59	40
Mar	40	32	61	55
Apr	31	19	78	56
May	15	10	35	44
June	20	32	34	24
July	34	42	49	50
Aug	51	60	65	50
Sept	62	59	68	42
Oct	83	72	68	72
Nov	71	82	70	69
Dec	35	12	25	45
Total	511	444	646	587

SOURCE: KWARA STATE MINISTRY OF WOMEN AFFAIRS.

4.2 **COMPUTATION OF TIME, TREND, SEASONAL VARIATION AND SEASONAL INDEX FOR MARRIAGE REGISTRATION**.

MONTH/ YEAR	t	Yt	t^2	tY_t	Trend $(\widehat{Yt})$	S.VYt/ $(\widehat{Yt})$	Additive $Yt\text{-}\widehat{Yt}$	Seasonal Index
2020 Jan	1	30	1	30	35.53	0.84	-5.53	-15.94
Feb	2	39	4	78	35.96	1.08	3.04	-4.37
Mar	3	40	9	120	36.39	1.11	3.61	-2.88
Apr	4	31	16	124	36.82	0.84	-5.82	-1.45
May	5	15	25	75	37.25	0.40	-22.25	-18.88
June	6	20	36	120	37.67	0.53	-17.67	-17.83
July	7	34	49	238	38.10	0.89	-4.10	-1.97
Aug	8	51	64	408	38.63	1.32	12.47	-10.24
Sep	9	62	81	558	39.38	1.55	22.04	-10.81
Oct	10	83	100	830	39.38	2.11	43.62	-26.63
Nov	11	71	121	781	39.81	1.78	31.19	-25.46
Dec	12	35	144	420	40.24	0.87	-5.24	-18.65
2021 Jan	13	5	169	65	40.67	0.12	-35.67	-15.94
Feb	14	19	196	266	41.09	0.46	-22.09	-4.37
Mar	15	32	225	480	41.52	0.77	-9.52	-2.88
Apr	16	19	256	304	41.95	0.45	-22.95	-1.45
May	17	10	289	170	42.38	0.24	-32.38	-18.88
June	18	32	324	576	42.80	0.75	-10.80	-17.83
July	19	42	361	798	43.23	0.97	-1.23	-1.97
Aug	20	60	400	1200	43.66	1.37	16.34	-10.24
Sep	21	59	441	1239	44.09	1.34	14.91	-10.81
Oct	22	72	484	1584	44.51	1.62	27.49	-26.63
Nov	23	82	529	1886	44.94	1.82	37.06	-25.46

Dec	24	12	576	288	45.37	0.26	-33.37	-18.65
2022 Jan	25	34	625	850	45.79	0.74	-11.79	-15.94
Feb	26	59	676	1534	46.22	1.28	12.78	-4.37
Mar	27	61	729	1647	46.656	1.31	14.35	-2.88
Apr	28	78	784	2184	47.08	1.66	30.92	-1.45
May	29	35	841	1015	47.51	0.74	-12./51	-18.88
June	30	34	900	1020	47.94	0.71	-13.94	-17.83
July	31	49	961	1519	48.36	1.01	0.64	-1.97
Aug	32-	65	1024	2080	48.79	1.33	16.21	-10.24
Sep	33	68	1089	2244	49.22	1.38	18.78	-10.81
Oct	34	68	1156	2312	49.65	1.37	18.35	-26.63
Nov	35	70	1225	2450	50.07	1.39	19.93	-25.46
Dec	36	25	1296	900	50.50	0.50	-25.50	-18.65
2023 Jan	37	40	1369	1480	50.93	0.79	-10.93	-15.94
Feb	38	40	1444	1520	51.36	0.78	-11.36	-4.37
Mar	39	55	1521	2145	51.78	1.06	3.22	-2.88
Apr	40	56	1600	2240	52.21	1.07	3.79	-1.45
May	41	44	1681	1804	52.64	0.84	-8.64	-18.88
June	42	24	1764	1008	53.07	0.45	-29.07	-17.83
July	43	50	1849	2150	53.49	0.93	-3.92	-10.81
Aug	44	50	1936	2200	53.92	0.93	-3.92	-10.24
Sep	45	42	2025	1890	54.35	0.77	-12.35	-26.63
Oct	46	72	2116	3312	54.78	1.31	17.22	-26.63
Nov	47	69	2209	3243	55.20	1.25	13.80	-25.46
Dec	48	45	2304	2160	55.63	0.81	-10.63	-18.65
Total	**1,1**	**2,1**	**38,0**	**57,54**				

4.2.1 COMPUTATION OF TREND USING LINEAR REGRESSION

Where $\hat{\beta} = \dfrac{n\sum tY_t - \sum t \sum Y_t}{n\sum t^2 - \sum t^2}$

$$\frac{(48 \times 57545) - (1176 \times 2188)}{(48 \times 38024) - (1176)^2}$$

$$\frac{189072}{442176}$$

$\hat{\alpha} = \dfrac{\sum Y_t - \beta \sum t}{n}$

$$\frac{2188 - (0.42759 \times 1176)}{48}$$

$$\frac{2188\text{-}502.84584}{48}$$

$$= \frac{1685.15416}{48}$$

$$= 35.1073$$

Therefore,

$$\hat{Y} = \hat{\alpha} + \hat{\beta}t$$

$\hat{Y} = 35.1073 + 0.42766t$

When t=l, $\hat{Y}t = 35.1073 + 0.4276(1)$

$= 35.1073 + 0.4276$

35.5349

When t= 2, $\hat{Y}t = 35.1073 + 0.4276(2) = 35.1073 + 0.8552 = 35.9625$

When t = 3, $\hat{Y}t = 35.1073 + 0.4276(3)$

$= 35.1073 + 1.2828 = 36.3901.$

When t =48 $\hat{Y}t = 35.1073 + 0.4276(48) = 35.1073 + 20.5248 = 55.6321$

4.3 ADDITIVE SEASONAL INDEX

Month/Year	JAN	FEB	MA	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2020	-553	3.04	3.61	-5.82	-22.25	-17.67	-4.10	12.47	22.04	43.62	31.19	-5.24
2021	-	-22.09	-9.52	-22.95	-32.38	-10.80	-1.23	16.34	14.91	27.49	37.06	33.3
2022	-	12.78	14.35	30.92	-12.51	-13.94	0.64	16.21	18.78	18.35	19.93	25.5
2023	-10.93	-11.36	3.22	3.79'	-8.64	-29,04	-3.49	-3.92	-12.35	17.22	13.80	10.0
Total	-63.92	-17	63	11.66	5.94	-17.68	-71.48	-8.18	41.10	43.38	106.68	74.8
Average	-15.98	-4.41	2.92	1.49	-18.9	-17.87	-1787	-2.01	10.28	10.85	26.67	25.5
Seasonal index	-15.94	-4.37	-2.88	-1.45	-18.88	-17.83	-10.24	-10.81	-26.63	25.46	18.651-155.11	-18.651-155.11

4.4 FORECAST FOR THE YEAR 2024

To project for the year 2024, we shall have not time (t) to be 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60.

Where 49 is January for 2024

Recall that $\hat{Y} = \hat{\alpha} + \hat{\beta}t$ For t= 49 January for 2024

$\hat{Y}_{49} = 35.1073 + 0.4276 (49)$

$= 35.1073 + 20.9524 = 56.0597$

For t = 50 February for 2022

$\hat{Y}_{50} = 35.1073 + 0.4276(50)$

$= 35.1073 + 21.38 = 56.4873$

For t = 51 March for 2024

23

$\hat{Y}51 = 35.1073 + 0.4276\,(SI) = 35.1073 + 21.8076 = 56.9149$

For t = 52 April for 2024

$\hat{Y}_{52} = 35.1073 + 0.4276\,(52) = 35.1073 + 22.2352 = 57.3425$

For t = 53 May for 2024

$\hat{Y}_{53} = 35.1073 + 0.4276\,(53) = 35.1073 + 22.6628 = 57.7701$

For t = 54 June for 2024

$\hat{Y}_{54} = 35.1073 + 0.4276\,(54) = 35.1073 + 23.0904 = 58.1977$

For t = 55 March for 2024

$\hat{Y}_{55} = 35.1073 + 0.4276\,(55)$

$= 35.1073 + 23.518 = 58.6253.$

For t = 56 August for 2024

$\hat{Y}_{56} = 35.1073 + 0.4276\,(56)$

$= 35.1073 + 23.9456 = 59.0529$

For t = 57 September for 2024

$\hat{Y}_{57} = 35.1073 + 0.4276\,(57)$

$= 35.1073 + 24.3932 = 59.4805$

For t = 58 October for 2024

$\hat{Y}_{58} = 35.1073 + 0.4276\,(58)$

$= 35.1073 + 24.8008 = 59.9081.$

For t = 59 March for 2024

$\hat{Y}_{51} = 35.1073 + 0.4276\,(59)$

$= 35.1073 + 25.2284 = 60.7633.$

Note: Since we are making up of Additive model, we shall add the seasonal index (S.I) to the trend in order to forecast i.e $\hat{Y}_{t(forecast)} = \hat{Y}\,t(_{trend}) + S.I.$

When t = 49 January of 2024.

$Y_{t(forecast)} = 56.0597 + (-15.98)$

$= 56.0597 - 15.98 = 40.0797$

When t = 50 February of 2024

$\hat{Y}_{t(forecast)} = 56.0597 + (-4.41)$

$= 56.0597 - 4.41 = 52.0773$

When t = 51 March of 2020.

$\hat{Y}_{t(forecast)} = 56.0597 + (2.92)$

$= 56.0597 - 2.92$

$= 59.8349$

When t = 52 April of 2024.

$\hat{Y}_{t(forecast)} = 57.3425 + 1.49 = 58.8325$

When t = 53 May of 2024

$= 57.7701 - 18.92 = 38.85$

When t = 54 June of 2020.

$= 58.1977 - 17.87 = 40.3277$

When t = 55 July of 2020.

$= 58.6253 - 2.01 = 56.6153$

When t = 56 August of 2024.

$= 59.0529 - 10.28 = 69.3329$

When t = 57 September of 2024. $= 59.4805 - 10.85$

$= 70.3305$

When t = 58 October of 2024.

$= 59.9081 - 26.67 = 86.5781$

When t = 59 November of 2024.

 = 60.3357- 25.50 = 85.8357

When t = 60 December of 2024.

= 60.7633- 18.69 = 42.0733.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.1   SUMMARY OF FINDINGS

From the study, the bar chart and the pie chart show that the number of marriage increase steadily from the years 2020 to 2023. Also the trend value clearly shows that there is a steady decrease in the number of marriage from the second half of the years 2021 up to January 2022, and from there, was a sharp increase in the number of marriage.

However, the seasonal index computed indicated and oscillatory movement in the number of marriage registration between January 2022 and May 2022 and from August 2022, it was oscillating from month to month. This was as a result of seasonal effect in the original data which has been removed as there are deference between them and the time plot.

The least square method used in forecasting marriage for years 2024 on monthly basis are as follows:

January = 40. 0773

February =52.0773

March =59. 8349

April =58. 8325

May =38. 8501

June = 40.3277

July = 56.6123

August = 69. 3329

September = 70.3305

October = 86.5781

November = 85.8357

December = 42.0733

This shows that marriage will be increasing a time increases

5.2   CONCLUSION

The trend of marriage recorded for past twelve years (2020-2023) is on the increases which implies that registration of marriage will be at the great increase with time. This satisfied that there is relationship between marriage and time.

The trend of marriage contains seasonal variation, which have been smoothening by moving average method. Thus, the trend value appears to follow almost identical patterns during the corresponding month of the successive years. This indicated that Christmas and New Year festivals have influence on marriage as it can be seen on the trend values.

5.3   RECOMMENDATIONS

Based on the result obtained and problem encountered, I thereby make the following recommendations.

Firstly, more marriage registries should be established in all the local government areas of the state and where they are, they should be made more effective.

Secondly, more registrars should be employed to be able to extend registration of marriage to all local government areas.

Third, government should encourage orientation and enlightenment campaign on marriage registration especially among the illiterates.

Finally, record of vital events should be kept properly.

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