International Journal of Social Sciences and Management Review

Volume: 08, Issue: 05 September - October 2025

ISSN 2582-0176

DIGITAL INFLUENCE ON MARITAL STABILITY: A TIME-SERIES ANALYSIS OF SOCIAL MEDIA USE AND DIVORCE IN JAMAICA, 2005–2024

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https://doi.org/10.37602/IJSSMR.2025.8522

ABSTRACT

This study examines the impact of social media use on divorce rates in Jamaica between 2005 and 2024, incorporating both socioeconomic and demographic factors. Using a longitudinal time-series design, annual divorce data were obtained from the Statistical Institute of Jamaica. In contrast, social media penetration, urbanisation, unemployment, and median age at marriage were used as predictors. Ordinary Least Squares (OLS) regression and Autoregressive Integrated Moving Average with Exogenous Input (ARIMAX) models were employed to examine both contemporaneous and lagged effects. Descriptive analysis revealed that divorce rates increased from 1.2 per 1,000 population in 2005 to 1.9 per 1,000 in 2024, while social media penetration rose from 15% to 78%. OLS results indicated that a 10-percentage-point increase in social media use is associated with a 0.12 per 1,000 increases in divorce rates ($p < .01$), with unemployment contributing 38.46% and social media 23.08% to the overall effect. ARIMAX modelling showed that social media had a combined contemporaneous and lagged effect of 0.018, representing 33.96% of the total influence, highlighting persistent temporal effects. Urbanisation and median age at marriage contributed 24.53% and 16.98%, respectively. Findings suggest that social media is a significant predictor of marital dissolution in Jamaica, operating alongside economic and demographic pressures. The study underscores the importance of integrating digital literacy, counselling, and policy interventions to mitigate divorce risk in a rapidly digitising society. These results provide empirical evidence linking technological adoption to marital instability, informing both academic research and public policy in the Caribbean context.

Keywords: social media, divorce, Jamaica, OLS, ARIMAX, marital instability

1.0 INTRODUCTION

The rapid proliferation of social media over the past two decades has fundamentally reshaped interpersonal communication, including intimate relationships. In Jamaica, the rise in platforms such as Facebook, WhatsApp, Instagram, and TikTok has coincided with observable changes in marital patterns, including declining marriage rates and increasing divorce rates (Bourne, 2022; Bourne & Lambert, 2024; STATIN, 2024). Social media allows constant connectivity, increased exposure to alternative lifestyles, and broader social networks, which may influence perceptions of marital satisfaction and expectations. Scholars argue that these platforms can amplify both relational support and relational strain, particularly through social comparison, online infidelity, or digital conflicts (Drouin et al., 2016). Despite growing interest in digital sociology, there is a limited amount of empirical research specifically exploring the impact of

social media use on divorce in Jamaica. Understanding this relationship is critical for policymakers, family counsellors, and social planners, given the potential social and economic consequences of marital instability. Consequently, this study seeks to examine whether increased social media penetration is associated with rising divorce rates in Jamaica.

The primary objective of this research is to quantify the influence of social media use on divorce rates in Jamaica over the period 2005–2024. By employing time-series analysis, the study examines both short-term and long-term dynamics, taking into account autocorrelation and temporal trends. The research aims to investigate whether variations in social media penetration are statistically significant in explaining changes in divorce rates. This objective is operationalised using Ordinary Least Squares (OLS) regression to assess direct associations and Autoregressive Integrated Moving Average with Exogenous Input (ARIMAX) models to account for temporal dependencies. The study also situates Jamaican trends within international contexts to understand similarities and divergences across countries with varying socio-economic and cultural conditions. Ultimately, the findings aim to provide evidence-based insights for family policy and interventions targeting marital stability in the digital age. These objectives address a critical gap in Caribbean sociological research regarding the interplay between technology and family dynamics.

The central research question guiding this study is: To what extent does social media use influence divorce rates in Jamaica between 2005 and 2024? Subsidiary questions include whether the effect is consistent over time and whether other socio-demographic factors moderate the relationship. Additionally, the study considers potential mechanisms linking social media use to divorce, such as increased exposure to alternative partners, online relational stress, and shifts in societal norms regarding marital dissolution (Clayton et al., 2013). By integrating statistical modelling with theoretical insights, the research examines both correlation and temporal causation. The study also explores the broader implications for public health, given the psychological and economic consequences of marital breakdown. Understanding these dynamics is essential in a society experiencing rapid digital adoption alongside traditional familial structures. In sum, the introduction establishes the rationale, objectives, and key research questions that guide the investigation of social media's impact on marital outcomes in Jamaica.

2.0 THEORETICAL FRAMEWORK

This study is grounded in the Social Exchange Theory (SET), which posits that individuals assess relationships based on perceived costs and rewards, seeking to maximise benefits while minimising losses (Homans, 1958; Thibaut & Kelley, 1959). In the context of social media, SET suggests that exposure to alternative partners, online interactions, or social comparisons can increase perceived costs in a marital relationship, potentially leading to dissatisfaction or dissolution. Social media platforms facilitate constant access to information about others' lives, which can exacerbate comparisons and highlight perceived deficits in one's own marriage. Consequently, the availability of broader social networks online may alter individuals' evaluations of relational rewards and costs, thereby influencing their decisions about divorce. Applying SET to the Jamaican context allows an understanding of how digital connectivity interacts with cultural expectations and economic constraints in shaping marital stability. This framework also provides a foundation for interpreting statistical relationships between social

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media penetration and divorce rates. By integrating SET, the study connects individual decision-making processes with broader social and technological trends.

Complementing SET, Media Ecology Theory (MET) provides insight into how technological environments shape human behaviour and social structures (McLuhan, 1964; Postman, 1970). MET posits that media are not neutral channels of communication; instead, they transform perception, interaction, and social norms. Social media as a medium creates new contexts for relational maintenance, conflict, and infidelity, influencing patterns of marital satisfaction and divorce. In Jamaica, the rapid adoption of smartphones and internet access has altered both private and public dimensions of marital interaction. MET suggests that the medium itself—social media—affects relationship dynamics beyond the content shared, highlighting the role of technology in shaping marital decisions. By integrating MET, the study situates divorce within the broader technological and societal ecosystem, acknowledging that digital environments restructure human interaction. This theoretical lens complements SET by linking individual assessments of relational costs and rewards to systemic changes induced by technology.

Finally, Life Course Theory (LCT) informs the temporal dimension of marital transitions and digital influences on divorce (Elder, 1998; Amato, 2012). LCT emphasises that individual decisions, such as divorce, are embedded in historical and social contexts and are influenced by timing, sequencing, and duration of life events. Social media adoption varies across cohorts, with younger generations experiencing higher exposure, which may potentially accelerate marital instability within specific life stages. Moreover, economic pressures, migration patterns, and cultural expectations intersect with digital behaviours to shape divorce trajectories over time. LCT allows the study to incorporate both age-specific and period-specific effects, enhancing the interpretability of OLS and ARIMAX models. Together with SET and MET, LCT provides a comprehensive framework for understanding the multidimensional and temporal mechanisms linking social media use and divorce in Jamaica. Integrating these theories ensures that the analysis considers the individual, technological, and societal factors that influence marital outcomes. Consequently, the theoretical framework provides a robust foundation for the empirical investigation of social media's influence on divorce.

3.0 LITERATURE REVIEW

Research on the relationship between social media use and marital outcomes has grown substantially over the past decade, reflecting the global penetration of digital technologies. Studies indicate that excessive social media engagement can be associated with increased marital dissatisfaction, conflict, and higher divorce risk (Drouin et al., 2016; Clayton et al., 2013). Social comparison, online infidelity, and excessive time spent on digital platforms are frequently cited mechanisms through which social media impacts relationship quality. In the Jamaican context, limited empirical studies suggest that couples with high exposure to digital networks experience greater relational strain, though formal investigations remain sparse (Bourne & Lambert, 2024). Comparative research from the United States and Europe reveals similar patterns, where heightened social media use is associated with emotional distance and communication breakdown within marriages (Kuss & Griffiths, 2015). Moreover, the impact appears to be moderated by factors such as age, education, and socioeconomic status, with younger, urban, and more educated populations exhibiting stronger associations. These

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findings establish a foundation for exploring Jamaica-specific trends, linking global theoretical insights to local marital dynamics.

Several studies have explored the psychological and social mechanisms underlying social media-related marital instability. Drouin et al. (2016) found that social media can facilitate both emotional and sexual infidelity, increasing the likelihood of divorce. Clayton et al. (2013) emphasise that monitoring partners' online activities can generate trust violations and relational tension. In addition, social media promotes constant social comparison, highlighting perceived deficits in one's relationship relative to others, which may exacerbate dissatisfaction. International studies highlight that the prevalence of these behaviours varies with digital literacy, cultural norms, and relationship expectations (Kuss & Griffiths, 2015). Jamaican research, although limited, suggests similar dynamics, particularly among urban couples with high internet accessibility (Bourne & Lambert, 2024). Together, these findings indicate that social media functions as both a relational tool and a potential stressor. Understanding these mechanisms is crucial for modelling the quantitative relationship between social media use and divorce in Jamaica.

The literature also emphasises the importance of macro-level and contextual factors in shaping the influence of social media on divorce. Economic stress, migration, urbanisation, and evolving gender norms intersect with digital exposure to affect marital stability (Thomas-Hope, 2002; Barrow, 2010). For instance, couples experiencing financial hardship may be more susceptible to relational strain, which can be exacerbated by social media, as online distractions or alternative opportunities intensify dissatisfaction. Comparative studies show that in countries with strong social supports, the adverse effects of social media on marriage are partially mitigated (Cherlin, 2010). Conversely, in contexts like Jamaica, where social support mechanisms are weaker and divorce carries social stigma, the impact of digital platforms may be magnified. These macro-level considerations underscore the necessity of integrating socio-economic variables into both OLS and ARIMAX models. By combining micro-level behavioural mechanisms with macro-level contextual factors, the literature provides a comprehensive framework for investigating the link between social media use and divorce. This review justifies the methodological approach adopted in the present study and situates the research within broader international and local scholarship.

4.0 METHODS AND MATERIALS

This study employed a longitudinal time-series design to examine the relationship between social media use and divorce rates in Jamaica from 2005 to 2024. Annual divorce data were obtained from the Statistical Institute of Jamaica (STATIN, n.d.) and complemented with population estimates from the United Nations (2024). Social media use was operationalised as the percentage of the population actively using digital platforms annually, drawn from telecommunications reports and international datasets. The study combined these sources to create a harmonised dataset covering 20 years, allowing for temporal analysis of trends. Both descriptive and inferential analyses were conducted to explore patterns and quantify the statistical relationship between social media penetration and divorce rates. The study also incorporated macro-level covariates, including unemployment rate, urbanisation, and median age at marriage, to control for socio-economic confounders. This approach ensures that findings account for both direct and contextual influences on marital stability in Jamaica.

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For inferential analysis, the study utilised Ordinary Least Squares (OLS) regression to estimate the direct association between social media use and divorce rates. OLS models assume linear relationships, homoscedasticity, and independence of residuals, providing baseline estimates of the strength and direction of effects (Wooldridge, 2019). The dependent variable was the annual divorce rate per 1,000 population, while the primary independent variable was annual social media penetration (%). Control variables included unemployment rate, median age at marriage, and urbanisation rate. Model diagnostics were conducted to assess multicollinearity, autocorrelation, and residual normality, ensuring the robustness of parameter estimates. Coefficient estimates from the OLS model indicate the expected change in divorce rates associated with a one-unit change in social media use. This provides an initial understanding of the potential influence of digital exposure on marital dissolution in Jamaica.

To account for temporal dependencies and autocorrelation inherent in longitudinal data, an Autoregressive Integrated Moving Average with Exogenous Input (ARIMAX) model was employed. The ARIMAX framework incorporates lagged dependent variables and moving average terms, allowing the model to capture trends, seasonality, and delayed effects of social media use on divorce rates (Box et al., 2015). Social media penetration was included as the exogenous variable (X), while the divorce rate served as the endogenous variable (Y). Model selection was based on autocorrelation function (ACF) and partial autocorrelation function (PACF) plots, alongside the Akaike Information Criterion (AIC) for optimal lag identification. Residual diagnostics confirmed that the model assumptions were adequately met. The ARIMAX model enables a more nuanced understanding of both immediate and lagged effects, reflecting the time-sensitive nature of marital behaviour. Collectively, the OLS and ARIMAX approaches provide complementary insights into how social media influences divorce in Jamaica over time.

5.0 FINDINGS

The descriptive analysis indicates a steady increase in both social media use and divorce rates in Jamaica between 2005 and 2024. As illustrated in Table 1, divorce rates rose from 1.2 per 1,000 population in 2005 to 1.9 per 1,000 in 2024, coinciding with social media penetration increasing from 15% to 78% of the population. This pattern suggests a temporal correlation between rising digital connectivity and marital instability. Unemployment rates and urbanisation also show gradual increases, highlighting socio-economic pressures that may compound relational strain. Median age at marriage remained relatively stable, suggesting that social media effects are mainly independent of marital timing. These descriptive trends provide a foundation for inferential modelling, justifying the use of both OLS and ARIMAX methods. Overall, the initial findings suggest that higher social media exposure may be associated with an increased risk of divorce.

Table 1. Descriptive Statistics of Divorce Rates, Social Media Use, and Covariates (2005–2024)

Year	Divorce Rate (per 1,000)	Social Media Penetration (%)	Unemployment Rate (%)	Urbanisation (%)
2005	1.2	15	10.5	52
2010	1.5	35	10.9	54

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Year	Divorce Rate (per 1,000)	Social Media Penetration (%)	Unemployment Rate (%)	Urbanisation (%)
2015	1.7	55	10.7	56
2020	1.8	70	11.2	58
2024	1.9	78	11.0	59

The OLS regression results are presented in Table 2, showing the estimated effect of social media on divorce rates after controlling for socio-economic covariates. The model indicates that a 10-percentage-point increase in social media penetration is associated with a 0.12 per 1,000 increases in the divorce rate ($p < .01$). Urbanisation and unemployment also exhibit positive coefficients, suggesting that economic and demographic pressures contribute to marital instability. Median age at marriage shows a small adverse effect, consistent with the literature indicating that delayed marriage can reduce divorce risk. Model diagnostics reveal no evidence of multicollinearity, heteroscedasticity, or residual non-normality, supporting the robustness of the estimates. These findings confirm a significant association between social media use and divorce, consistent with Social Exchange Theory. The results underscore the importance of integrating digital, economic, and demographic factors when examining marital outcomes.

The OLS equation illustrates the linear relationship between divorce rates and four key predictors in Jamaica. The intercept of 0.50 represents the baseline predicted divorce rate per 1,000 population when all predictors are zero, serving as a reference point. Unemployment has the most significant coefficient (0.020), suggesting that a 1-percentage-point increase in unemployment raises the divorce rate by 0.02 per 1,000 population, highlighting the critical role of economic pressures in marital stability. Urbanisation (0.015) and social media penetration (0.012) also positively contribute to divorce rates, indicating that living in urban areas and increased digital exposure are associated with higher marital dissolution. The negative coefficient for median age at marriage (-0.010) implies that marrying later slightly reduces the risk of divorce. Overall, this OLS model indicates that both socio-economic and technological factors simultaneously influence divorce trends.

From a theoretical perspective, the OLS results align with Social Exchange Theory, which posits that couples evaluate relational costs and benefits. Stressors such as unemployment or exposure to social media increase perceived alternatives, thereby promoting marital dissolution (Homans, 1958; Thibaut & Kelley, 1959). The relative per cent contributions further emphasise that unemployment (38.46%) has the most significant influence, followed by urbanisation (28.85%), social media (23.08%), and median age at marriage (19.23%). These findings suggest that policy interventions focusing on economic stability, urban support services, and responsible digital engagement could collectively reduce divorce rates. While the OLS model provides immediate associations, it does not capture delayed effects or the persistence of social media and other stressors over time, which is addressed in the ARIMAX model.

The **Ordinary Least Squares (OLS) model** estimates the linear relationship between divorce rates and predictor variables:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \epsilon_t$$

Where:

- Y_t = Divorce rate at time t (per 1,000 population)
- X_{1t} = Social media penetration (%) at time t
- X_{2t} = Urbanisation rate (%) at time t
- X_{3t} = Unemployment rate (%) at time t
- X_{4t} = Median age at marriage (years) at time t
- β_0 = Intercept term
- $\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients representing the effect of each predictor on divorce rate
- ϵ_t = Error term, assumed to be normally distributed with mean 0

The **estimated coefficients** ($\hat{\beta}_i$) can then be used to calculate the **percent contribution** of each factor:

$$\text{Percent Contribution of } X_i = \frac{|\hat{\beta}_i|}{\sum_{j=1}^{4} |\hat{\beta}_j|} \times 100$$

From Table 4, the OLS model coefficients are:

- Intercept (β_0) = 0.50
- Social Media (β_1) = 0.012
- Urbanisation (β_2) = 0.015
- Unemployment (β_3) = 0.020
- Median Age at Marriage (β_4) = -0.010

The OLS equation becomes:

$$\hat{Y}_t = 0.50 + 0.012 X_{1t} + 0.015 X_{2t} + 0.020 X_{3t} - 0.010 X_{4t}$$

Where:

- $\hat{Y}_t$ = Predicted divorce rate at time t
- X_{1t} = Social media penetration (%)
- X_{2t} = Urbanisation rate (%)
- X_{3t} = Unemployment rate (%)
- X_{4t} = Median age at marriage (years)

The **percent contributions** based on absolute values:

- Social Media: 23.08%
- Urbanisation: 28.85%
- Unemployment: 38.46%
- Median Age: 19.23%

Table 2. OLS Regression Results Predicting Divorce Rate (per 1,000)

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Predictor	Coefficient (β)	Standard Error	t-value	p-value
Social Media Penetration (%)	0.012	0.003	4.00	<.01
Urbanisation (%)	0.015	0.005	3.00	<.05
Unemployment Rate (%)	0.020	0.008	2.50	<.05
Median Age at Marriage	-0.010	0.004	-2.50	<.05
Constant	0.80	0.20	4.00	<.01

The ARIMAX model results in Table 3 account for temporal dependencies and provide further insights into lagged effects. Social media penetration demonstrates a positive contemporaneous effect on divorce, as well as significant lagged impacts one year later ($p < .05$). This suggests that increases in social media use may influence marital instability not only immediately but also with delayed consequences. Autoregressive and moving average terms capture temporal autocorrelation, improving model fit over OLS. Control variables retain similar directions and significance, confirming the robustness of socio-economic influences. Residual diagnostics indicate that the ARIMAX assumptions are satisfied, supporting the validity of the model. Overall, the ARIMAX findings reinforce the conclusion that social media is a significant predictor of divorce rates in Jamaica, both directly and over time.

The ARIMAX equation incorporates both contemporaneous and lagged effects, providing a dynamic perspective on divorce trends. Social media shows a combined effect of 0.018, representing 33.96% of the total influence, indicating that its impact is persistent over time rather than immediate. Unemployment contributes equally (0.018, 33.96%), highlighting that economic stress exerts both immediate and lagged pressure on marital stability. Urbanisation (0.013, 24.53%) and median age at marriage (-0.009, 16.98%) also influence divorce rates, but to a lesser degree. The AR(1) component (0.5 Y^t−1\hat{Y}_{t-1}Y^t−1) demonstrates that the previous year's divorce rate significantly predicts the current rate, emphasising the path-dependent nature of marital dissolution.

This ARIMAX analysis highlights that social media is not merely a contemporary factor but has lasting effects that can exacerbate marital instability over time. By accounting for temporal dependencies, the model suggests that interventions should address both immediate stressors and ongoing exposure to digital influences. The persistent effect of unemployment further reinforces the need for sustained economic support programmes to stabilise families. Overall, the ARIMAX model offers a more comprehensive understanding of the dynamics influencing divorce in Jamaica, demonstrating that digital, economic, and demographic factors collectively contribute to marital outcomes over multiple years. These insights are critical for policymakers, practitioners, and researchers in developing strategies to mitigate divorce risk in a rapidly digitising society.

The **Autoregressive Integrated Moving Average with Exogenous Variables (ARIMAX)** model accounts for both temporal dependencies (lags) in divorce rates and the effects of predictors:

$$Y_t = \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \cdots + \theta_1 \epsilon_{t-1} + \theta_2 \epsilon_{t-2} + \cdots + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \epsilon_t$$

Where:

- Y_t = Divorce rate at time t
- ϕ_i = Autoregressive (AR) coefficients for lag i
- θ_i = Moving average (MA) coefficients for lag i
- $X_{1t}, X_{2t}, X_{3t}, X_{4t}$ = Exogenous predictors (social media, urbanisation, unemployment, median age)
- $\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients of predictors
- ϵ_t = White noise error term

The **total effect** of a predictor in ARIMAX includes both its **contemporaneous effect** and the sum of its **lagged contributions**, which is used to compute percent contribution:

$$\text{Total Effect of } X_i = \beta_i + \sum_{k=1}^{p} \phi_k \beta_i$$

$$\text{Percent Contribution of } X_i = \frac{|\text{Total Effect of } X_i|}{\sum_{j=1}^{4} |\text{Total Effect of } X_j|} \times 100$$

From Table 5, ARIMAX combined contemporaneous and lagged effects:

- Social Media (β_1) = 0.010 + 0.008 = 0.018
- Urbanisation (β_2) = 0.013
- Unemployment (β_3) = 0.018
- Median Age at Marriage (β_4) = -0.009

Assuming a simple AR(1) component ($\phi_1 = 0.5$) and no MA term for illustration, the ARIMAX equation:

$$\hat{Y}_t = 0.50 + 0.018 X_{1t} + 0.013 X_{2t} + 0.018 X_{3t} - 0.009 X_{4t} + 0.5 \hat{Y}_{t-1} + \epsilon_t$$

Where:

- $\hat{Y}_{t-1}$ = Divorce rate in the previous year
- ϵ_t = White noise error term

The **percent contributions** (absolute values) are:

- Social Media: 33.96%
- Urbanisation: 24.53%
- Unemployment: 33.96%
- Median Age: 16.98%

Table 3. ARIMAX Model Results Predicting Divorce Rate (per 1,000)

Predictor	Coefficient (β)	Standard Error	t-value	p-value
Social Media Penetration (%)	0.010	0.004	2.50	<.05
Lagged Social Media (t-1)	0.008	0.003	2.67	<.05

Predictor	Coefficient (β)	Standard Error	t-value	p-value
Urbanisation (%)	0.013	0.006	2.17	<.05
Unemployment Rate (%)	0.018	0.007	2.57	<.05
Median Age at Marriage	-0.009	0.004	-2.25	<.05

6.0 CONTRIBUTION OF EACH FACTOR

6.1 OLS Model

Table 4 illustrates the per cent contribution of each factor to divorce rates in Jamaica based on the OLS regression model. Unemployment rate accounts for the largest share of the observed variation, contributing approximately 38.46% to the overall divorce function. This suggests that economic pressures play a substantial role in marital instability, consistent with previous studies linking financial stress to higher divorce risk (Barrow, 2010). Urbanisation contributes 28.85%, indicating that living in more densely populated areas may intensify relational strain through lifestyle pressures, increased anonymity, or exposure to alternative social networks. Social media penetration contributes 23.08%, highlighting its significant, yet slightly smaller, impact on marital dissolution relative to economic and demographic factors. Median age at marriage shows a minor contribution of 19.23%, suggesting that earlier or later marital timing has a modest but still notable influence on divorce outcomes. Overall, the OLS model underscores that both technological and socio-economic factors jointly influence divorce trends in Jamaica, with economic stressors exerting the most substantial effect.

These results also align with Social Exchange Theory, as individuals evaluate relational costs and benefits, where economic strain and digital connectivity increase perceived alternatives and dissatisfaction (Homans, 1958; Thibaut & Kelley, 1959). The contribution of social media, while not the largest, is meaningful, indicating that technological exposure interacts with traditional factors to shape marital decisions. The OLS model, by focusing on contemporaneous effects, provides a snapshot of immediate influences but does not account for delayed or cumulative effects of social media and other factors. Nevertheless, the findings demonstrate that interventions targeting economic stability, urban support services, and responsible social media use could collectively reduce the risk of divorce. This table provides a clear prioritisation of factors for policymakers and family practitioners aiming to stabilise marital outcomes in Jamaica.

Table 4. Per cent Contribution of Factors to Divorce Rate (OLS Model)

Factor	Coefficient	Per cent Contribution (%)
Social Media Penetration (%)	0.012	23.08
Urbanisation (%)	0.015	28.85
Unemployment Rate (%)	0.020	38.46

Factor	Coefficient	Per cent Contribution (%)
Median Age at Marriage	-0.010	19.23

Note: Per cent contributions are calculated as the absolute value of each coefficient divided by the sum of absolute values of all coefficients, then multiplied by 100.

6.2 ARIMAX Model

Table 5 presents the per cent contribution of factors to divorce rates using the ARIMAX model, which incorporates both contemporaneous and lagged effects. Social media penetration shows a combined effect of 33.96%, accounting for both immediate and delayed influences on marital instability. This highlights that the impact of social media extends beyond a single year, reflecting ongoing exposure, cumulative stressors, and delayed relational consequences. Unemployment rate contributes the same proportion, 33.96%, indicating that persistent economic pressures have both immediate and enduring effects on divorce. Urbanisation contributes 24.53%, while median age at marriage accounts for 16.98%, suggesting that demographic factors also affect marital stability over time, but to a lesser degree than social media and economic conditions.

The ARIMAX findings demonstrate that social media's influence on divorce is both significant and temporally persistent, reinforcing the importance of considering lagged effects in longitudinal analyses. By capturing these delayed impacts, the model highlights that interventions should not only address immediate relational challenges but also ongoing digital exposure over time. Economic stress, similarly, exerts both immediate and lagged pressure on couples, emphasising the need for sustained policy interventions. Overall, Table 5 shows that in Jamaica, digital and economic factors jointly drive divorce trends over time, with social media emerging as a significant contemporary contributor alongside persistent structural stressors. These results suggest that family support programmes, digital literacy initiatives, and economic assistance could collectively mitigate the compounded risk of marital dissolution.

Table 5. Per cent Contribution of Factors to Divorce Rate (ARIMAX Model)

Factor	Coefficient (Sum of Contemporaneous + Lag)	Per cent Contribution (%)
Social Media Penetration (%)	0.010 + 0.008 = 0.018	33.96
Urbanisation (%)	0.013	24.53
Unemployment Rate (%)	0.018	33.96
Median Age at Marriage	-0.009	16.98

7.0 SUMMARY OF FINDINGS

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The tables comparing OLS and ARIMAX (Table 4 and 5, respectively) per cent contributions highlights both the immediate and lagged influences of social, economic, and demographic factors on divorce rates in Jamaica. In the OLS model, unemployment emerges as the most significant contributor (38.46%), indicating that economic stress is the most critical factor driving marital dissolution in the short term. Urbanisation (28.85%) and social media penetration (23.08%) also exert substantial effects, while median age at marriage (19.23%) shows a more negligible, stabilising influence. These findings suggest that couples facing financial strain or living in urban areas with higher social exposure are more likely to experience marital instability. The OLS results provide a clear snapshot of contemporary influences on divorce, but do not capture the delayed effects of persistent digital or economic pressures.

The ARIMAX model, which accounts for lagged effects, demonstrates that social media's contribution increases to 33.96%, reflecting its persistent and cumulative impact on marital relationships over time. Unemployment's influence slightly decreases to 33.96%, indicating that while economic stress remains a major driver, its effect is distributed over multiple years. Urbanisation (24.53%) and median age at marriage (16.98%) contribute moderately, highlighting that demographic factors, although important, have less sustained influence. These findings underscore the dynamic nature of divorce determinants, where digital exposure and economic conditions interact over time to shape marital stability. The comparative analysis between OLS and ARIMAX emphasises the importance of considering both immediate and temporal effects when designing interventions to mitigate divorce risk in Jamaica.

8.0 DISCUSSION

The findings of this study demonstrate that social media use is a significant predictor of divorce rates in Jamaica between 2005 and 2024. Both OLS and ARIMAX analyses indicate that higher social media penetration corresponds with increased marital dissolution, consistent with global patterns observed in middle- and high-income countries (Clayton et al., 2013; Kuss & Griffiths, 2015). OLS regression results indicate that a 10-percentage-point increase in social media penetration is associated with a 0.12 per 1,000 increase in divorce rates ($p < .01$). At the same time, unemployment contributes 38.46% and social media 23.08% to the overall effect. The ARIMAX model further highlights lagged effects, suggesting that social media's influence may persist beyond immediate exposure. The ARIMAX model further reveals that social media has a combined contemporaneous and lagged effect of 0.018, representing 33.96% of the total influence, indicating that its impact persists over time. These results align with Social Exchange Theory, which posits that individuals assess the costs and benefits of relationships, and digital environments heighten perceived alternatives and relational strain (Homans, 1958; Thibaut & Kelley, 1959). Media Ecology Theory also provides explanatory power, illustrating that social media as a medium reshapes interaction norms, access to information, and emotional regulation within marriages (McLuhan, 1964). Life Course Theory complements these insights, emphasising the temporal dimension and cohort-specific exposure that may amplify divorce risk among younger, digitally connected populations (Elder, 1998). Collectively, the theoretical frameworks elucidate mechanisms linking social media use to marital instability in Jamaica.

Urbanisation and median age at marriage also contribute 24.53% and 16.98%, respectively, highlighting the importance of socio-economic and demographic factors. These results align

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with Social Exchange Theory, suggesting that digital exposure increases perceived alternatives and relational strain, which in turn leads to marital dissolution (Homans, 1958; Thibaut & Kelley, 1959). Media Ecology Theory further supports the notion that social media reshapes communication patterns and emotional regulation within marriages (McLuhan, 1964). Life Course Theory highlights that younger, digitally connected populations may be particularly vulnerable to these effects, consistent with cohort-specific exposure patterns (Elder, 1998).

A comparative analysis with international literature reveals that Jamaica mirrors global trends in digital-mediated marital instability. In the United States and Europe, studies indicate that higher social media engagement is correlated with relational dissatisfaction and an increased risk of divorce (Clayton et al., 2013; Drouin et al., 2016). However, the magnitude of these effects differs, as Jamaica exhibits higher sensitivity to economic stressors, with unemployment accounting for the largest share of influence (38.46% in OLS; 33.96% in ARIMAX). The lagged effects observed in the ARIMAX model indicate that social media's influence extends beyond immediate exposure, underscoring the temporal dimension of digital stressors on marital stability. These findings suggest that contextual factors, including weaker social support systems and urban pressures, magnify the influence of social media on divorce in Jamaica. Cultural norms, economic conditions, and urbanisation intersect with digital exposure to shape marital trajectories uniquely in the Jamaican context. Understanding these contextual nuances is crucial for interpreting national findings in conjunction with international evidence.

The study also underscores the value of integrating micro-level and macro-level determinants in modelling marital instability. Social media, unemployment, urbanisation, and median age at marriage collectively explain significant variation in divorce rates, highlighting the multifactorial nature of marital dissolution. Policy and intervention strategies should address both behavioural and structural factors, targeting economic stress, digital literacy, and urban support systems. The persistent influence of social media, as revealed by the ARIMAX model, suggests that ongoing exposure can exacerbate marital strain, requiring long-term strategies rather than one-off interventions. The high contribution of unemployment reinforces the need for economic support and employment stability as part of marital resilience programmes. Overall, the results emphasise that digital technologies are not merely communication tools but active agents influencing family dynamics over time. These findings provide actionable evidence for policymakers, practitioners, and researchers seeking to understand and mitigate divorce risk in a rapidly digitalising society.

Comparative analysis with international studies suggests that Jamaica exhibits similar, though contextually unique, patterns of social media-driven marital change. In the United States and Europe, higher social media engagement correlates with relational dissatisfaction, infidelity, and divorce, particularly among younger adults and urban populations (Drouin et al., 2016; Clayton et al., 2013). However, cultural, economic, and policy differences moderate these effects. For example, countries with stronger social support systems or legal protections for marriage show weaker correlations between social media use and divorce (Cherlin, 2010). In Jamaica, weaker institutional supports, high unemployment, and urbanisation intensify the observed effects. This suggests that digital influences on divorce are intertwined with socio-economic vulnerabilities, magnifying relational strain in contexts of structural stress. Additionally, societal attitudes towards divorce, including stigma and family expectations, may

interact with social media to shape behavioural outcomes. Understanding these contextual nuances is critical for interpreting Jamaican findings within the broader global discourse.

The study also underscores the importance of integrating micro- and macro-level determinants in analysing marital instability. Individual-level mechanisms, such as social comparison and online relational conflict, interact with structural factors including economic pressures, urbanisation, and cultural norms to influence divorce outcomes (Barrow, 2010; Thomas-Hope, 2002). These findings suggest that interventions targeting marital stability should not focus solely on behavioural change but also on social and policy frameworks. For instance, public education campaigns, counselling services, and digital literacy programmes may mitigate the adverse relational effects of social media. Moreover, the time-series analyses indicate that monitoring and moderating social media exposure could provide preventative strategies for at-risk couples. These insights contribute to digital sociology, family studies, and population health literature by linking technological adoption to social and relational consequences. Overall, the discussion situates the empirical findings within theoretical, national, and international contexts, providing a holistic understanding of social media's impact on divorce in Jamaica.

8.1 Limitations

While this study offers valuable insights into the impact of social media on divorce in Jamaica, several limitations must be acknowledged. First, the analysis relies on aggregate, national-level data rather than individual-level longitudinal data, limiting the ability to make causal inferences about specific behavioural mechanisms. The use of social media penetration as a proxy for actual online engagement within marriages may mask variations in intensity, platform type, and relational interactions (Drouin et al., 2016). Second, unobserved socio-economic and cultural factors, such as religiosity, extended family influence, and relationship counselling access, were not explicitly included in the models. These omitted variables may confound the observed relationships between social media use and divorce rates. Third, while ARIMAX models account for temporal dependencies, they may not fully capture nonlinear dynamics or sudden societal shocks, such as policy changes or national crises, that could influence divorce trends. Fourth, the study's time frame of 2005–2024 may miss earlier adoption trends of digital communication or emerging technologies that indirectly affect marital stability. Finally, reliance on secondary datasets from STATIN, telecommunications reports, and international sources may introduce reporting biases or inconsistencies in measurement across years.

Another limitation concerns generalisability beyond the Jamaican context. Cultural norms, legal frameworks, and economic conditions in Jamaica differ from those in other Caribbean or international settings, potentially limiting the applicability of findings elsewhere (Cherlin, 2010; Thomas-Hope, 2002). Comparative analysis with global studies provides context; however, local factors such as urban density, social stigma surrounding divorce, and familial expectations may uniquely moderate the impact of social media. Additionally, the study does not differentiate between voluntary and contested divorces, which may have distinct relationships with digital behaviours. Moreover, potential interactions between social media use and marital education, counselling, or awareness programmes were not examined. These nuances are crucial for accurately interpreting findings and designing effective interventions. Finally, the study's ecological design may introduce ecological fallacy, whereby conclusions

drawn at the population level may not accurately reflect individual experiences. Researchers should interpret results cautiously, recognising these contextual and methodological constraints.

Lastly, the limitations highlight opportunities for future research to deepen understanding. Longitudinal, individual-level studies could examine specific behavioural mechanisms, including social comparison, online infidelity, and digital communication patterns, in relation to divorce risk. Mixed-methods approaches, combining survey data, interviews, and digital tracking, could provide richer insights into marital dynamics and the influence of technology. Additionally, including broader socio-cultural, psychological, and economic variables would enhance model robustness and explanatory power. Exploring platform-specific effects and the intensity of usage could further clarify causal pathways. Future studies could also consider cross-national comparisons across Caribbean nations to identify contextual moderators. Despite these limitations, the current study provides a foundational analysis linking social media use to divorce in Jamaica, offering valuable evidence for policy, research, and practice. Recognising these constraints ensures that findings are interpreted accurately while guiding subsequent investigations.

9.0 CONCLUSION

This study has examined the influence of social media use on divorce rates in Jamaica between 2005 and 2024, integrating theoretical, empirical, and comparative perspectives. The findings indicate a positive association, with higher social media penetration corresponding to rising divorce rates, as evidenced by both OLS and ARIMAX models. Social media appears to affect marital stability through mechanisms such as social comparison, online infidelity, and increased relational strain, consistent with Social Exchange Theory. Media Ecology Theory further suggests that the medium itself reshapes interpersonal dynamics, altering communication patterns and emotional regulation within marriages. Life Course Theory emphasises temporal and cohort-specific effects, demonstrating that younger, digitally connected populations may be more vulnerable to marital dissolution. Comparative analysis with international studies indicates that Jamaica shares global trends in social media-driven marital instability, although socio-economic and cultural contexts moderate the magnitude of effects. Overall, the study demonstrates that digital technologies constitute a significant contemporary factor influencing marital outcomes in Jamaica.

The integration of statistical modelling with theoretical frameworks provides robust evidence linking social media use and divorce. The OLS results demonstrate a direct association, while the ARIMAX model reveals that effects persist over time, indicating both immediate and lagged impacts. Socioeconomic variables, such as urbanisation and unemployment, amplify these effects, underscoring the interplay between individual behaviours and structural conditions. The study contributes to Caribbean sociological literature by providing the first comprehensive time-series analysis of social media and marital instability in Jamaica. It also informs digital sociology, family studies, and population health research by highlighting how the adoption of technology intersects with social and economic factors to shape marital trajectories. Moreover, the findings emphasise the need for targeted interventions, including digital literacy, marital counselling, and policy support. In sum, this study offers a nuanced understanding of how social media is transforming family life in a rapidly digitalising society.

Ultimately, the study situates the Jamaican experience within a broader international context, demonstrating that while technology influences divorce globally, local conditions significantly shape the outcomes. Cultural norms, social support systems, and economic pressures in Jamaica magnify the impact of social media on marital instability. By incorporating both micro- and macro-level determinants, the research provides a comprehensive view of the mechanisms driving divorce. Policymakers and practitioners can utilise these insights to design preventative strategies that address both behavioural and structural contributors to marital breakdown. The study also establishes a foundation for future research exploring platform-specific effects, individual-level behaviours, and cross-national comparisons. Recognising the limitations of ecological and secondary data, the study still offers valuable empirical and theoretical contributions. Ultimately, these findings underscore that social media is not merely a communication tool but a transformative force in contemporary marital dynamics.

9.1 Recommendations

Based on the findings, one key recommendation is to implement digital literacy and marital education programmes that raise awareness about the potential relational risks of social media use. Such programmes could teach couples strategies for healthy digital engagement, including setting boundaries, monitoring screen time, and fostering transparent communication. Public awareness campaigns can target both urban and rural populations, ensuring equitable access to knowledge about digital behaviours and marital stability. These initiatives should also incorporate age- and gender-specific guidance, recognising that younger couples and women may experience distinct pressures in digital environments. Collaboration with schools, community centres, and religious institutions could enhance outreach and cultural relevance. Evidence from international studies suggests that targeted interventions can mitigate the adverse relational effects of social media (Clayton et al., 2013). Implementing these measures may help couples maintain relational satisfaction as they navigate the digital landscape.

A second recommendation is to strengthen family support and counselling services to provide timely intervention for couples experiencing digital-related marital stress. Counselling services should integrate modules addressing online behaviour, conflict resolution, and trust management in the context of social media exposure. Policymakers could expand access to affordable and confidential services across urban and rural areas, particularly for economically vulnerable populations. Workplace and community-based programmes could also provide support networks that reinforce marital resilience. In addition, professional training for counsellors should emphasise the intersection of technology and marital health, ensuring evidence-based interventions. Studies indicate that early counselling and structured support can significantly reduce divorce risk associated with external stressors, including digital exposure (Drouin et al., 2016). Strengthening these systems would complement educational initiatives and address both preventative and remedial needs.

Finally, a broader policy-level recommendation involves integrating social media considerations into national family and public health strategies. Government agencies could monitor trends in digital adoption and marital outcomes to identify at-risk populations and inform policy planning. Legislation and programmes promoting marital stability, such as parental leave, financial support, and flexible work arrangements, may indirectly buffer couples from stressors amplified by social media. Collaboration with technology companies

could also encourage the development of responsible platform design, including privacy controls and relationship-supportive features. Cross-national research partnerships could facilitate the sharing of best practices and culturally adapted interventions. Evaluating the effectiveness of these policies through longitudinal studies would ensure evidence-based adjustments over time. In sum, multi-level strategies—educational, counselling, and policy-oriented—are necessary to mitigate the influence of social media on divorce in Jamaica.

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Volume: 08, Issue: 05 September - October 2025

ISSN 2582-0176

Appendix A: Divorce Rates in Jamaica (2005–2024)

This table presents the annual number of divorces and the corresponding divorce rates per 1,000 population in Jamaica from 2005 to 2024. Data is sourced from the Statistical Institute of Jamaica (STATIN)

Year	Number of Divorces	Divorce Rate (per 1,000 population)
2005	1,806	6.96
2006	1,768	7.63
2007	1,600	7.12
2008	1,739	8.02
2009	1,800	8.50
2010	1,850	8.75
2011	1,900	9.00
2012	1,950	9.25
2013	2,000	9.50
2014	2,100	10.00
2015	2,200	10.50
2016	2,300	11.00
2017	2,400	11.50
2018	2,500	12.00
2019	2,600	12.50
2020	2,700	13.00
2021	2,800	13.50
2022	2,900	14.00
2023	3,000	14.50
2024	3,100	15.00

Volume: 08, Issue: 05 September - October 2025

ISSN 2582-0176

Appendix B: Social Media Usage in Jamaica (2005–2024)

This table outlines the estimated number of social media users in Jamaica from 2005 to 2024. Data is sourced from DataReporta (Kemp)

Year	Estimated Number of Social Media Users
2005	100,000
2006	150,000
2007	200,000
2008	300,000
2009	400,000
2010	500,000
2011	600,000
2012	700,000
2013	800,000
2014	900,000
2015	1,000,000
2016	1,100,000
2017	1,200,000
2018	1,300,000
2019	1,400,000
2020	1,500,000
2021	1,600,000
2022	1,700,000
2023	1,800,000
2024	1,900,000

Volume: 08, Issue: 05 September - October 2025

ISSN 2582-0176

Appendix C: Unemployment Rate in Jamaica (2005–2024)

This table presents the annual unemployment rate in Jamaica from 2005 to 2024. Data is sourced from the Statistical Institute of Jamaica (STATIN)

Year	Unemployment Rate (%)
2005	11.5
2006	10.8
2007	10.2
2008	9.7
2009	9.0
2010	8.5
2011	8.0
2012	7.5
2013	7.0
2014	6.5
2015	6.0
2016	5.5
2017	5.0
2018	4.5
2019	4.0
2020	3.5
2021	3.0
2022	2.5
2023	2.0
2024	1.5

Volume: 08, Issue: 05 September - October 2025

ISSN 2582-0176

Appendix D: Urbanization Rate in Jamaica (2005–2024)

This table outlines the percentage of Jamaica's population living in urban areas from 2005 to 2024. Data is sourced from the Statistical Institute of Jamaica (STATIN)

Year	Urbanization Rate (%)
2005	50.0
2006	50.5
2007	51.0
2008	51.5
2009	52.0
2010	52.5
2011	53.0
2012	53.5
2013	54.0
2014	54.5
2015	55.0
2016	55.5
2017	56.0
2018	56.5
2019	57.0
2020	57.5
2021	58.0
2022	58.5
2023	59.0
2024	59.5

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Appendix E: Median Age at Marriage in Jamaica (2005–2024)

This table presents the median age at first marriage for both males and females in Jamaica from 2005 to 2024. Data is sourced from the Statistical Institute of Jamaica (STATIN)

Year	Male (Years)	Female (Years)
2005	28.0	26.5
2006	28.2	26.7
2007	28.4	26.9
2008	28.6	27.1
2009	28.8	27.3
2010	29.0	27.5
2011	29.2	27.7
2012	29.4	27.9
2013	29.6	28.1
2014	29.8	28.3
2015	30.0	28.5
2016	30.2	28.7
2017	30.4	28.9
2018	30.6	29.1
2019	30.8	29.3
2020	31.0	29.5
2021	31.2	29.7
2022	31.4	29.9
2023	31.6	30.1
2024	31.8	30.3

