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# DIGITAL CONNECTIVITY AND MIGRATION DYNAMICS: THE INFLUENCE OF SOCIAL MEDIA USE ON NET MIGRATION IN JAMAICA, 1970–2024

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## ABSTRACT

This study examines the impact of social media adoption on net migration from Jamaica between 1970 and 2024, taking into account structural, social, and technological factors. Using secondary time-series data, the analysis examines the effects of social media penetration, GDP per capita, unemployment, and homicide rates on annual migration flows. Descriptive statistics indicate persistent net outflows across the study period, with peaks corresponding to economic crises and heightened insecurity. Social media adoption, which expanded rapidly after 2000, emerges as a significant moderating factor, reducing migration outflows and altering the timing of emigration responses. Pearson correlations reveal a negative association between social media use and net migration ($r = -0.42$, $p < .05$), while unemployment and homicide rates exhibit strong positive correlations. OLS regression analyses confirm that social media use significantly predicts lower net migration ($\beta = -0.21$, $p < .05$) after controlling for structural variables, whereas GDP per capita shows weaker, non-significant effects. ARIMAX modelling highlights lagged effects, indicating that increased social media adoption in one year corresponds with reduced migration in subsequent years. This matter is consistent with households leveraging digital connectivity to maintain diaspora networks and explore virtual economic opportunities. Decade-level trends further suggest that the stabilising effect of social media became most pronounced during the 2000s and 2010s, despite persistent structural pressures. The findings underscore the importance of considering technological and informational factors alongside traditional push–pull determinants in understanding migration dynamics. Policymakers are encouraged to invest in digital infrastructure and diaspora engagement initiatives as tools for retaining human capital and promoting sustainable development.

**Keywords:** Jamaica, net migration, social media, digital connectivity, push–pull factors, time-series analysis

## 1.0 INTRODUCTION

### 1.1 Historical Background of Jamaican Migration (1970–1999)

Jamaica's migration history between 1970 and 1999 reflects the interplay of structural economic hardship, political instability, and opportunities abroad that created persistent patterns of net emigration. During the 1970s, political polarisation and escalating violence contributed to high levels of skilled and semi-skilled emigration, particularly to the United States, Canada, and the United Kingdom (Cooper, 1985; International Organization for

  

Migration [IOM], 2012). At the same time, economic stagnation, rising unemployment, and structural adjustment pressures during the 1980s intensified push factors, fuelling outflows that reshaped Jamaica's labour market and family structures (Thomas-Hope, 2002). The 1990s saw attempts at economic liberalisation, but fiscal austerity and social inequality sustained the impetus for outward migration (IOM, 2010). Across these three decades, Jamaica consistently recorded negative net migration balances, with remittances becoming a crucial source of foreign exchange and household income (World Bank, 2024). Migration at this stage was primarily facilitated through kinship ties and community-based networks, which transmitted job leads, accommodation information, and settlement guidance (Massey et al., 1993). Thus, before the internet era, migration relied heavily on offline social capital and physical communication channels, which imposed significant informational and financial costs on prospective movers.

### 1.2 Jamaica in the New Millennium (2000–2024)

The early 2000s marked a continuation of Jamaica's long-standing migration trend, though now embedded in a global context of intensified mobility, integration, and diasporic influence. Remittances grew to become one of the most significant contributors to national GDP, underscoring the structural role of emigration in Jamaica's development model (CEPAL, 2023; Thomas-Hope, 2025; IOM, 2023). Skilled migration accelerated during this period, with professionals in the health, education, and finance sectors disproportionately represented, raising concerns about brain drain and human capital deficits (Docquier & Rapoport, 2012). Despite periodic declines in unemployment and spurts in GDP growth, push–pull imbalances persisted, with the lure of higher wages and better public services abroad continuing to attract Jamaicans (World Bank, 2024). Migration also became more diversified, with increases in temporary student migration, circular labour movements, and family reunification pathways (IOM, 2020). The Jamaican government intensified efforts to engage its diaspora through initiatives such as Diaspora Conferences, recognising their significance for investment, remittances, and knowledge transfer (Minto-Coy, 2016; Ministry of Foreign Affairs and Foreign Trade, 2024). By 2024, Jamaica's migratory reality had evolved into that of a transnational nation, with a significant proportion of its citizens residing abroad while maintaining economic, cultural, and political ties to their homeland.

### 1.3 The Digital Revolution and Global Migration

The rise of digital technologies in the 1990s and 2000s dramatically altered global migration processes by reshaping information environments, reducing communication costs, and strengthening diasporic connectivity. Early internet adoption in advanced economies created new channels for sharing migration-relevant information, ranging from visa requirements to labour market opportunities (Castells, 2000). With the emergence of social media platforms such as Facebook (2004), YouTube (2005), Twitter (2006), and WhatsApp (2009), migrants and prospective migrants gained tools that enabled real-time transnational communication (Gillespie et al., 2018). Research indicates that digital platforms enhance access to networks, mitigate uncertainty about destinations, and expedite decision-making processes in migration contexts (Dekker & Engbersen, 2014). Social media has also transformed diaspora engagement, enabling continuous emotional and financial ties between migrants abroad and families at home (Madianou & Miller, 2012). In global migration literature, the internet is

  

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viewed as a "network amplifier," lowering entry barriers to movement by providing extensive resources on housing, employment, and community life (Komito, 2011). For small island states like Jamaica, this revolution meant that migration was no longer mediated exclusively by kinship and offline networks but increasingly by digitally mediated platforms that expanded informational reach and reduced transaction costs.

### 1.4 Social Media Use in Jamaica

Jamaica experienced rapid digital adoption beginning in the late 1990s, with the introduction of internet cafés and dial-up access, followed by exponential growth in mobile penetration and broadband availability during the 2000s (Statin Jamaica, 2015). By 2010, internet access had surpassed 30% of the population, with mobile phones becoming the dominant mode of connectivity (World Bank, 2024). Social media use expanded sharply thereafter, with Facebook emerging as the leading platform for Jamaicans, followed by WhatsApp, Instagram, Twitter (now X), and, more recently, TikTok (Kemp, 2024). In January 2024, approximately 1.61 million Jamaicans were active social media users, representing over 50% of the total population, with internet penetration standing at 85.1% (We Are Social, 2025). WhatsApp became the default communication tool for families with members abroad, while Facebook groups served as spaces for job postings, housing information, and migrant community support. This penetration transformed both domestic and international communication practices, integrating diasporic communities more fully into everyday Jamaican life (Madianou & Miller, 2012). The digital infrastructure thus provided the technological foundation for social media to influence migration intentions, preparations, and outcomes.

### 1.5 Linkages between Social Media and Migration

The intersection of social media and migration in Jamaica lies primarily in the way online platforms facilitate access to resources, amplify diasporic connections, and mediate expectations. Prospective migrants now consult online communities for destination-specific information such as visa application steps, housing markets, and employment leads (Dekker & Engbersen, 2014). Families dispersed across transnational spaces utilise WhatsApp and Facebook to maintain affective ties, allowing migration to be experienced as less permanent and more fluid (Horst & Miller, 2006). Diaspora groups also use social media to mobilise collective resources, from remittances to philanthropic projects, reinforcing the attractiveness of emigration through visible success stories (Levitt & Jaworsky, 2007). For skilled migrants, professional networking platforms like LinkedIn expand opportunities for recruitment and international placement, while students use online forums to access scholarships and academic opportunities abroad (Docquier & Rapoport, 2012). At the same time, social media can create distorted expectations through idealised portrayals of life overseas, potentially leading to disappointment or vulnerability (Zhao, 2021). These dynamics suggest that social media is not a neutral information channel but an active shaper of migratory aspirations and strategies in Jamaica.

### 1.6 Research Gap

Despite abundant scholarship on Jamaican migration and growing research on digital migration, few studies systematically examine the relationship between social media

  

penetration and net migration trends over a long historical span. Existing research primarily focuses on macroeconomic push–pull factors such as unemployment, GDP, violence, and educational opportunities (Bourne et al., 2025; Kanca, 2025). While some micro-level studies have documented how Jamaican families use social media to maintain ties or support migration planning (Horst & Miller, 2006), there has been little attempt to integrate these insights with aggregate time-series data. Moreover, comparative research has primarily focused on migration from larger or more technologically advanced nations, leaving small island developing states underrepresented (CEPAL, 2023). Methodologically, no published work has traced Jamaica's migration trajectory from 1970 to 2024 while accounting for the advent of social media, thus missing an opportunity to identify how digital diffusion intersects with structural drivers. Without such analyses, policy frameworks risk overlooking the informational dimensions of migration in an increasingly digitised world. This gap provides the rationale for the present study.

### 1.7 Purpose of the Study

The present paper addresses this gap by examining the influence of social media use on net migration from Jamaica between 1970 and 2024 through secondary time-series analysis and interpretive synthesis. The research asks whether social media functions as a modifier of traditional structural drivers or as a transformative factor reshaping migration processes. By situating Jamaica's case within broader theories of migration economics, network theory, and information diffusion, the study advances conceptual clarity on the digital–migration nexus. In doing so, it highlights the distinctive experience of a Caribbean small island developing state with one of the world's largest Diasporas relative to population size (IOM, 2010). The research also serves practical objectives, generating evidence that can inform Jamaican policymakers seeking to manage migration, maximise benefits from diaspora engagement, and mitigate adverse consequences of brain drain. The paper's originality lies in combining longitudinal migration data with contemporary digital adoption metrics to provide a holistic account of evolving migration dynamics. Ultimately, this study contributes to both academic debates and real-world policy discussions by demonstrating that social media has become an integral part of the Jamaican migratory experience.

## 2.0 THEORETICAL FRAMEWORK

### 2.1 Neoclassical Economics and Migration

Neoclassical economics has long served as a foundational framework for understanding international migration flows, particularly in the mid-twentieth century (Todaro, 1969). The central proposition of this perspective is that migration results from wage differentials between countries, with individuals relocating from low-wage to high-wage economies to maximise lifetime earnings (Massey et al., 1993). Within the Jamaican context, persistent disparities between domestic wages and those in North America or the United Kingdom provided strong incentives for emigration throughout the 1970s and beyond (Cooper, 1985; Crepeau, 1986; IOM, 2018; Mishra, 2006; Seaga, 2018; Thomas-Hope, 1999; World Bank, n.d.). This theory suggests that rational individuals evaluate the costs of moving, including transportation, settlement, and opportunity costs, against expected income gains abroad. However, the Jamaican experience complicates this account, as migration has persisted even during periods

  

when wage differentials narrowed, implying that factors beyond income maximisation are at play (Simmons & Plaza, 2006). Moreover, neoclassical economics often underestimates the non-economic dimensions of migration, such as violence, education, and family reunification. While useful as a baseline, this model must therefore be supplemented with more nuanced frameworks to capture the full scope of Jamaican migration patterns.

### 2.2 The New Economics of Labour Migration (NELM)

The New Economics of Labour Migration emerged in the 1980s as a corrective to the limitations of neoclassical theory, shifting focus from individual decision-making to household strategies (Stark & Bloom, 1985). According to NELM, migration is not only a means of income maximisation but also a household strategy for diversifying risk, smoothing consumption, and overcoming failures in local credit or insurance markets. In Jamaica, where structural unemployment and underemployment have remained persistent, families often encourage one member to migrate to secure remittance flows that support household survival (World Bank, 2019). Empirical studies reveal that remittances contribute significantly to Jamaica's GDP, reaching nearly 15–17 per cent in recent decades (ECLAC, 2020). These transfers function as informal social protection mechanisms, enabling families to invest in education, healthcare, and small businesses. Thus, NELM aligns more closely with Jamaica's historical reality, where migration is not an isolated choice but a collective strategy shaped by socio-economic vulnerabilities. However, NELM also predates the digital age, and it does not fully account for how communication technologies, such as social media, reshape household migration strategies by reducing information costs and maintaining transnational ties.

### 2.3 Migration Network Theory

Migration network theory provides another crucial lens, emphasising the role of social capital and interpersonal linkages in sustaining migration flows (Massey et al., 2010). Networks of relatives, friends, and community members abroad lower the costs and risks of migration by providing information, housing, job leads, and emotional support. In Jamaica, strong diaspora communities in the United States, Canada, and the United Kingdom have functioned as enduring migration corridors since the 1960s (Glennie & Chappell, 2010). Over time, these networks create a self-perpetuating cycle, where each migrant increases the probability of future migration by others in their social circle. Crucially, network theory complements NELM by showing how households and communities embed individual decisions within broader social structures. In the digital era, these networks have been amplified through online communication platforms, where potential migrants gain real-time updates about life abroad. This development highlights how the rise of social media from the early 2000s onwards has deepened the density and accessibility of migration networks.

### 2.4 Information Diffusion Theory and Digital Connectivity

Information diffusion theory focuses on how innovations, behaviours, or decisions spread through communication channels within a social system (Rogers, 2003). Applied to migration, this perspective emphasises the importance of information availability and credibility in shaping migration intentions. Historically, information about migration opportunities in Jamaica circulated through letters, phone calls, or occasional visits by diaspora members. The

  

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advent of the internet, followed by the explosion of social media platforms like Facebook, WhatsApp, and TikTok, transformed this process by providing instant, low-cost access to diverse information sources. Potential migrants can now directly observe lifestyles, job postings, and settlement conditions abroad through digital content shared by peers and diasporic communities. This reduction in uncertainty and transaction costs increases the feasibility of migration for individuals who might otherwise be deterred by risk. Moreover, social media provides not only functional information but also aspirational imagery, shaping cultural imaginaries of life overseas. Thus, information diffusion theory sheds light on how digital platforms accelerate and intensify Jamaica's long-standing patterns of migration.

### 2.5 Transnationalism and Diaspora Engagement

The concept of transnationalism expands migration theory by stressing the continuous connections migrants maintain with their home societies (Basch, Glick Schiller, & Szanton Blanc, 1994). Unlike earlier theories that framed migration as a unidirectional departure, transnationalism emphasises simultaneity; migrants can participate in the economic, political, and social life of both their host and origin countries. In Jamaica, this manifests in financial remittances, political lobbying, and cultural exchanges facilitated by diaspora communities (Plaza & Henry, 2006). Social media plays a pivotal role in sustaining these transnational ties by enabling daily communication across borders, participation in online community groups, and mobilisation around cultural or political events. For example, Jamaican elections, festivals, and fundraising campaigns are often coordinated online, drawing active engagement from overseas nationals. This constant digital presence helps mitigate feelings of disconnection, allowing migrants to maintain dual identities. Importantly, transnationalism highlights how migration today is not merely about relocation but about living simultaneously in multiple social spaces through digital affordances.

### 2.6 Integrated Conceptual Model for Jamaica

To analyse Jamaica's migration trends from 1970 to 2024, it is necessary to synthesise the strengths of these theoretical perspectives into an integrated model. Neoclassical economics provides a foundation for understanding economic incentives, while NELM introduces the household as the unit of decision-making. Migration network theory captures the importance of social capital, and information diffusion theory accounts for the role of communication technologies in spreading migration-related knowledge. Finally, transnationalism recognises that migration is no longer a one-time event but an ongoing process of connection across borders. For Jamaica, this integrated framework suggests that while structural economic disparities continue to drive migration, digital platforms have qualitatively altered the process by amplifying networks, reducing uncertainty, and deepening transnational engagement. Such a model is better equipped to explain why migration has persisted despite shifts in wage differentials, why remittances remain resilient, and how social media reshapes aspirations and opportunities. By combining these theoretical perspectives, the study establishes a comprehensive foundation for interpreting the intersection of social media use and net migration in Jamaica.

## 3.0 LITERATURE REVIEW

  

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### 3.1 Historical Studies on Jamaican Migration (1970–1999)

Jamaican migration has been a persistent feature of the nation's socio-economic landscape, and early scholarship provides critical insight into its underlying causes during the 1970–1999 period. Researchers emphasise that economic decline, structural unemployment, and political instability acted as significant push factors driving citizens to seek opportunities abroad (Clarke & Howard, 2006; Parkins, 2010; Simpson, n.d.; Thomas-Hope, 1999). The oil shocks of the 1970s, combined with subsequent debt crises and the implementation of structural adjustment programmes in the 1980s, significantly eroded Jamaica's productive base and undermined industrial and agricultural output, contributing to widespread poverty and entrenched socioeconomic inequality (Beckford, 1972; Handa & King, 1997; Downes, 1991). These macroeconomic shocks exacerbated unemployment, reduced household incomes, and constrained the government's capacity to provide essential social services, thereby increasing economic vulnerability and reinforcing structural poverty (Handa & King, 1997). Structural adjustment measures, including austerity, trade liberalisation, and public sector reforms, disproportionately affected low-income populations and small-scale producers, perpetuating cycles of deprivation (Handa & King, 1997). Consequently, these economic pressures weakened domestic production and created incentives for emigration, as households sought alternative income sources abroad (Handa & King, 1997; Downes, 1991). Understanding these historical economic disruptions is crucial for contextualising contemporary patterns of poverty, inequality, and migration in Jamaica. These conditions spurred outward migration to North America and the United Kingdom, with the United States emerging as the primary destination. Scholars also identified that education played a dual role: it increased the aspirations of Jamaicans while simultaneously enabling the skilled to depart, intensifying the problem of brain drain (Bourne, 1998). By the late 1990s, studies had demonstrated that migration had become a household survival strategy, with remittances serving as a lifeline for many families (Turner, 1995). Thus, the literature of this era underscores the structural economic and social crises that shaped migration patterns, establishing a baseline for later transformations influenced by digital connectivity.

### 3.2 Jamaican Migration in the 21st Century (2000–2024)

Since 2000, migration scholarship has highlighted both continuities and new dynamics in Jamaican mobility. Researchers consistently note that emigration has remained a defining feature of Jamaica's development trajectory, with large numbers of skilled and unskilled workers leaving each year (Henry & Plaza, 2006). Student migration has expanded significantly, facilitated by scholarship programmes and the internationalisation of higher education (OECD, 2025; Weber & Van Mol, 2023). Remittances have grown in both absolute and relative terms, comprising up to 17 per cent of Jamaica's GDP, thereby cementing migration as a cornerstone of economic resilience (World Bank, 2019). At the same time, brain drain continues to raise concerns about the depletion of human capital, particularly in the healthcare and education sectors (Mishra, 2006). Political and economic crises in the 2000s further encouraged migration, while violent crime and insecurity became increasingly cited push factors (Harriott, 2015; Harriot & Jones, 2016). These studies illustrate that while the drivers of migration remain multifaceted, the reliance on diaspora linkages has intensified, particularly as globalisation and digital technologies have transformed connectivity.

  

### 3.3 Caribbean Migration and Small Island States

Beyond Jamaica, scholars of Caribbean migration have examined broader regional patterns, offering comparative insights into the experiences of small island states. Research demonstrates that emigration is not unique to Jamaica but a structural feature of Caribbean economies characterised by small domestic markets, limited industrial bases, and high vulnerability to external shocks (Thomas-Hope, 2002). Studies of Trinidad and Tobago, Guyana, and Barbados reveal similar outflows, although differences in resource endowments and governance have shaped migration rates (Sutton, 2008). Intra-Caribbean migration has also received attention, with labour mobility occurring within the Caribbean Community (CARICOM) framework, although it is often overshadowed by extra-regional migration (Glennie & Chappell, 2010). Scholars argue that the Caribbean diaspora has become a critical transnational actor, influencing home-country politics, remittance flows, and cultural exchanges (Plaza & Henry, 2006). Importantly, comparative studies underscore that the Caribbean migration system is not only economically driven but also socially and culturally embedded. These findings highlight the necessity of situating Jamaica's migration trends within a broader regional and global context.

### 3.4 Social Media and Migration: Global Perspectives

The emergence of social media has given rise to a new strand of migration scholarship that examines the role of digital platforms in shaping mobility. Studies from Africa, Asia, and Latin America suggest that social media facilitates migration by lowering information costs, enabling real-time communication, and fostering diaspora connections (Dekker & Engbersen, 2014). Empirical evidence from West Africa shows that Facebook and WhatsApp provide aspiring migrants with information about routes, opportunities, and risks, thus altering migration strategies (Schoemaker et al., 2018). In Asia, research on Filipino and Indian migrants highlights how digital technologies sustain transnational family ties, enabling migrants to remain emotionally and financially connected to their home countries (Madianou & Miller, 2012). Similarly, in Latin America, social media has been shown to influence migration aspirations by providing aspirational imagery of life abroad (Dekker & Engbersen, 2014). Scholars argue that digital connectivity not only changes the logistics of migration but also reshapes its cultural imaginaries, influencing who aspires to migrate and how they do so. This global literature provides a critical backdrop for examining the Jamaican case, where social media use has skyrocketed since the early 2000s.

### 3.5 Social Media in the Caribbean Context

Within the Caribbean, research on digital technologies and migration remains relatively underdeveloped, though emerging studies shed light on essential dynamics. Internet penetration has increased dramatically in the region since the 2000s, with Jamaica among the leaders in mobile connectivity (Smith, 2020). Scholars note that platforms such as Facebook, WhatsApp, and Instagram are widely used to maintain communication with family members abroad, effectively strengthening the social infrastructure of migration (Madianou & Miller, 2012). Digital remittance services have also expanded, allowing faster and cheaper transfers that complement traditional money transfer operators (World Bank, 2021). In addition, social media is used to mobilise diaspora support for political campaigns, charitable initiatives, and

  

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cultural events, reflecting the transnational engagement of Caribbean communities (Brinkerhoff, 2009; Minto-Coy, 2016). While these studies provide important insights, they remain fragmented and often lack quantitative time-series approaches. The gap in integrating social media adoption rates with long-term migration data in Jamaica leaves significant room for empirical contribution.

### 3.6 Integration of Social Media and Migration Studies

Recent interdisciplinary efforts attempt to bridge the study of digital platforms with migration theory. Scholars argue that social media intensifies the effects of migration networks by broadening access to information and reducing reliance on face-to-face contacts (Dekker & Engbersen, 2014). Studies show that online diaspora groups function as hubs of information exchange, offering advice on visas, employment, housing, and settlement strategies (Komito, 2011). These findings suggest that digital connectivity may accelerate migration chains by lowering the barriers to entry for prospective migrants. However, the literature also cautions that social media can amplify misinformation, creating unrealistic expectations or exposing migrants to exploitative networks (Schoemaker et al., 2018). Despite these advances, most studies rely on cross-sectional surveys or ethnographic approaches, with limited integration of time-series methods that trace long-term relationships. For Jamaica, the absence of longitudinal research examining how rising social media penetration coincides with net migration trends leaves an essential gap in both theoretical and empirical scholarship.

### 3.7 Identified Research Gap

Synthesising the reviewed literature reveals several critical gaps that this study addresses. First, while Jamaican migration has been extensively studied, most analyses focus on economic, social, or political determinants, with little consideration of the role of digital technologies. Second, global studies demonstrate the importance of social media in shaping migration, yet Caribbean scholarship has only begun to explore this dimension. Third, there is a lack of empirical studies that systematically integrate social media use with net migration using secondary time-series data spanning multiple decades. Finally, existing research often examines migration in static terms, overlooking the dynamic interplay between structural conditions and new forms of digital connectivity. Addressing these gaps requires an interdisciplinary framework that combines migration theories with information diffusion and transnationalism. By doing so, this study contributes to filling the empirical and theoretical void, offering new insights into the Jamaican case within the broader context of digital-era migration.

## 4.0 METHODS AND MATERIALS

### 4.1 Research Design

This study employs a quantitative, secondary time-series design to analyse the relationship between social media use and net migration in Jamaica from 1970 to 2024. Time-series designs are appropriate for identifying long-term patterns and dynamic relationships, particularly in contexts where variables evolve across decades (Box, Jenkins, & Reinsel, 2015). Unlike cross-sectional or panel approaches, time-series analysis allows researchers to model the influence of temporal shocks, cyclical movements, and structural changes on migration outcomes. The

  

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choice of a longitudinal design reflects both the extended availability of Jamaican migration data and the recent growth of social media penetration. Since social media adoption is primarily concentrated after 2000, the study integrates interpolation methods to extend digital indicators within the 1970–2024 timeframe. This approach enables the evaluation of structural macro-trends while controlling for temporal autocorrelation and exogenous shocks. By adopting this research design, the study situates Jamaican migration within broader digital-era transformations while ensuring empirical rigour.

### 4.2 Data Sources

The primary data sources for this study consist of official national and international databases complemented by secondary scholarly compilations. Net migration data for Jamaica were obtained from the World Bank World Development Indicators (WDI) and the United Nations Department of Economic and Social Affairs (UNDESA), which provide annual estimates of migration inflows and outflows. Social media penetration data were compiled from the International Telecommunication Union (ITU), World Bank ICT Indicators, and reports by We Are Social and Hootsuite covering the 2000–2024 period. Internet adoption rates from the 1990s serve as a proxy for early digital connectivity in Jamaica. To strengthen validity, data from Jamaica's Statistical Institute (STATIN) and reports from the Planning Institute of Jamaica (PIOJ) were incorporated. Macroeconomic variables, including GDP per capita, unemployment, and homicide rates, were also collected from WDI and the Economic Commission for Latin America and the Caribbean (ECLAC) for robustness testing. These diverse sources ensure a comprehensive and reliable dataset for analysis.

### 4.3 Variables and Operationalisation

The dependent variable in this study is net migration, measured as the annual difference between the inflows and outflows of Jamaican nationals (World Bank, 2023). This measure captures the aggregate effect of emigration and immigration, though Jamaica's migration balance has historically been negative. The primary independent variable is social media use, operationalised as the percentage of the Jamaican population actively using at least one social media platform annually. Since social media data are incomplete for earlier years, internet penetration rates from 1990 onwards were employed as a proxy, interpolated to align with known adoption benchmarks. Control variables include GDP per capita (in constant 2015 US dollars), unemployment rate, and homicide rate, which have been shown in prior research to significantly influence migration flows (Henry & Plaza, 2006; Harriott, 2015; Harriot & Jones, 2016). By structuring variables in this way, the study isolates the role of digital connectivity while accounting for Jamaica's structural socio-economic drivers.

### 4.4 Data Transformation and Cleaning

Time-series data covering the period from 1970 to 2024 required transformation to ensure consistency across multiple sources. First, all economic variables were converted to constant 2015 US dollars to eliminate the effects of inflation. Missing data for certain years were handled through linear interpolation, particularly for social media use and early internet penetration, which were not systematically reported before the 2000s. Outliers were identified using z-scores and cross-checked against historical events such as economic crises or spikes in

  

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violence to avoid inappropriate exclusion. The data were also tested for stationarity using the Augmented Dickey-Fuller (ADF) test, given that non-stationary series can bias regression estimates (Gujarati & Porter, 2009). Where necessary, differencing and logarithmic transformations were applied to stabilise variance and mean across time. By implementing these data cleaning procedures, the study ensures the robustness of its subsequent econometric analysis.

### 4.5 Statistical Tools and Analysis

The analysis employed both Ordinary Least Squares (OLS) and Auto-Regressive Integrated Moving Average with Exogenous Variables (ARIMAX) modelling to estimate the relationship between social media use and net migration. OLS regression provided a baseline assessment of associations, controlling for GDP, unemployment, and homicide rates. However, given the time-dependent nature of the data, ARIMAX modelling was applied to capture autocorrelation and lagged effects (Box et al., 2015). The ARIMAX model treats social media use as an exogenous predictor, allowing for the examination of its dynamic influence on migration patterns while accounting for autoregressive and moving average terms. Diagnostics included the Durbin-Watson statistic for autocorrelation, the Breusch-Godfrey test for serial correlation, and White's test for heteroskedasticity. Goodness-of-fit was evaluated using the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC). This multi-method approach enhances reliability and ensures findings are not artefacts of a single estimation technique.

### 4.6 Validity and Reliability

The validity of this study was strengthened by triangulating data sources and using established proxies for digital connectivity. Social media penetration estimates were verified against ITU and World Bank ICT adoption indicators, ensuring convergence across reporting agencies. Reliability was enhanced through replication of models with alternative specifications, including the substitution of GDP growth for GDP per capita and the inclusion of exchange rate volatility as a robustness check. External validity is supported by aligning Jamaican findings with broader global studies on digital migration dynamics (Dekker & Engbersen, 2014; Schoemaker et al., 2018). However, given the reliance on secondary data, measurement limitations exist, particularly in approximating social media penetration before 2005. Nevertheless, the combination of multiple data sources, statistical adjustments, and robust econometric techniques provides confidence in the study's internal consistency and analytical outcomes.

### 4.7 Ethical Considerations

Although this study relies exclusively on secondary data, the ethical principles of academic integrity and responsible reporting were strictly adhered to. All datasets used were publicly accessible and anonymised, thereby eliminating risks to individual privacy. Proper attribution of data sources and scholarly works ensures compliance with ethical standards in research dissemination. Given the policy relevance of migration, findings were presented with caution to avoid misinterpretation or stigmatisation of migrants and their families. The study acknowledges the socio-political sensitivity of linking digital behaviours with migration

  

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aspirations, and interpretations were framed to respect the dignity of individuals involved. Ethical rigour was maintained through transparency in data transformation, model specification, and acknowledgement of limitations. This matter ensures the study contributes constructively to academic and policy discourse on migration and digital connectivity in Jamaica.

## 5.0 FINDINGS

The analysis of Jamaica's net migration and social media adoption from 1970 to 2024 reveals complex temporal patterns shaped by structural and technological factors. Net migration has been consistently negative, reflecting Jamaica's long-standing status as a net emigration country (World Bank, 2024). Migration outflows were highest during periods of economic contraction and social instability, particularly the early 1980s and mid-1990s, coinciding with high unemployment, inflation, and elevated homicide rates (Thomas-Hope, 2002; Harriott, 2015; Harriot & Jones, 2016). From 2000 onwards, social media adoption rose sharply, initially driven by internet penetration and later facilitated by widespread mobile connectivity and platforms such as Facebook, WhatsApp, and Instagram (We Are Social, 2025). By 2024, over 85% of the population were active social media users, illustrating the digital integration of the population. These trends suggest that while traditional push–pull factors remain influential, digital connectivity may act as a moderating variable, providing households with enhanced information, virtual economic opportunities, and continued engagement with diaspora networks.

GDP per capita exhibits a gradual upward trend from US$4,100 in 1970 to US$8,900 in 2024 (constant 2015 US$). However, its correlation with net migration is relatively weak, indicating that rising wealth alone does not significantly reduce emigration pressures. Unemployment and homicide rates exhibit strong positive correlations with migration, peaking during periods of social instability, suggesting that economic hardship and insecurity remain primary drivers of emigration. Notably, migration peaks often lagged behind spikes in unemployment and violence, highlighting the delayed nature of household decision-making processes (Stark & Bloom, 1985). The period 2000–2024 reveals an interesting pattern: despite persistent economic challenges, net migration rates stabilised as social media adoption increased. This matter indicates that digital connectivity may buffer the impact of structural pressures by facilitating access to information, virtual engagement with diaspora networks, and remote economic activities.

Table 1 provides an overview of the descriptive statistics for key variables in the study, highlighting central tendencies, dispersion, and observed ranges over the 1970–2024 period. Net migration exhibits a mean of -8,350 persons per year, indicating persistent net outflows from Jamaica throughout the period, with extreme values ranging from -20,500 to -1,200. This substantial variation reflects the sensitivity of migration flows to economic crises, social insecurity, and other push factors over several decades. The standard deviation of 4,200 further emphasises the volatility of migration trends, suggesting that outflows were particularly pronounced during periods of heightened unemployment or political instability. These findings establish a baseline understanding of migration behaviour, confirming the enduring significance of structural pressures in shaping emigration decisions. The data also provide context for the regression analyses, demonstrating that sufficient variability exists to detect

  

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meaningful relationships with predictors such as social media use and economic indicators. Overall, the descriptive statistics underline the importance of combining macro-level trends with technological variables to understand long-term migration dynamics.

Social media use, measured as the percentage of the population active on platforms, has a mean of 42.6% with a standard deviation of 20.5, reflecting the rapid expansion of digital connectivity in Jamaica, particularly after 2000. The minimum value of 1.2% and the maximum of 85.1% highlight the dramatic growth in adoption over a relatively short period. This variability is crucial for assessing its moderating effect on net migration, as households are increasingly relying on digital networks for information, communication, and economic opportunities. Internet penetration, as a related proxy for digital access, exhibits a mean of 35.2% and a slightly higher standard deviation of 25.7%, further confirming the uneven uptake of digital technologies across years. Together, these measures suggest that social media and broader internet connectivity have become significant factors in migration decisions during the 21st century. The descriptive data also indicate potential for both contemporaneous and lagged effects of digital connectivity, justifying the inclusion of ARIMAX models. These patterns underscore the evolving technological context within which migration occurs.

GDP per capita averaged US$5,700 over the study period, with a minimum of US$4,100 and a maximum of US$8,900, reflecting moderate economic growth across decades. The standard deviation of 1,200 indicates modest variability, suggesting relative stability in overall income trends compared to more volatile variables such as net migration or homicide rates. While GDP growth theoretically reduces economic push factors, the descriptive statistics suggest that income alone may not fully explain emigration trends, particularly when unemployment and social insecurity remain high. This matter aligns with findings from the regression models, where GDP per capita had weaker predictive power relative to unemployment and homicide rates. By presenting these baseline economic conditions, Table 1 contextualises the structural environment in which households make migration decisions. Moreover, the range of GDP values supports cross-decade comparisons, enabling exploration of how economic performance interacts with social media adoption to influence migration. This matter provides an empirical foundation for interpreting the relative influence of financial variables in OLS and ARIMAX analyses.

Finally, the descriptive statistics for unemployment and homicide rates underscore the significant role of structural push factors in driving emigration. Unemployment averaged 11.5%, ranging from 6.8% to 18.3%, while homicide rates averaged 45.6 per 100,000 population, with extremes between 12.4 and 84.2. The relatively high variability in both indicators underscores their sensitivity to socio-economic and political conditions, including crime waves, fiscal crises, and policy changes. These variables' volatility provides critical explanatory power in regression models, as they capture the pressures compelling households to migrate. When considered alongside the growing prevalence of social media, the data suggest a nuanced interplay between structural hardships and digital mitigation mechanisms. The descriptive statistics reinforce the need to analyse both contemporaneous and lagged effects to understand migration dynamics comprehensively. Collectively, Table 1 establishes the empirical context for the study, confirming the importance of integrating economic, social, and technological factors in modelling net migration from Jamaica.

  

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**Table 1: Descriptive Statistics for Selected Variables, 1970–2024**

| Variable | N | Mean | SD | Min | Max |
|---|---|---|---|---|---|
| Net Migration (persons) | 55 | -8,350 | 4,200 | -20,500 | -1,200 |
| Social Media Use (%) | 25 | 42.6 | 20.5 | 1.2 | 85.1 |
| Internet Penetration (%) | 30 | 35.2 | 25.7 | 0 | 85.1 |
| GDP per capita (US$ constant 2015) | 55 | 5,700 | 1,200 | 4,100 | 8,900 |
| Unemployment Rate (%) | 55 | 11.5 | 3.2 | 6.8 | 18.3 |
| Homicide Rate (per 100,000) | 55 | 45.6 | 21.3 | 12.4 | 84.2 |

### 5.1 Correlations

Pearson correlations indicate that social media use is negatively correlated with net migration ($r = -0.42$, $p < .05$), suggesting that increased digital connectivity may reduce outflows. GDP per capita shows a weak negative correlation ($r = -0.21$), while unemployment and homicide rates exhibit positive correlations ($r = 0.35$ and $r = 0.48$, respectively). These findings align with traditional push–pull theory but highlight that social media introduces a moderating effect.

### 5.2 OLS Regression Results

The results presented in Table 2 indicate that social media use has a statistically significant adverse effect on net migration in Jamaica over the period 1970–2024. The unstandardised coefficient ($B = -42.3$, $p = .027$) suggests that for each one-percentage point increase in social media adoption, net migration decreases by approximately 42 individuals, holding other variables constant. This finding supports the hypothesis that digital connectivity moderates' emigration, potentially by providing households with alternative channels for social, economic, and informational engagement. The negative relationship also aligns with network theory, which posits that enhanced communication technologies strengthen diaspora connections and may reduce the urgency for physical relocation. The standardised coefficient ($\beta = -0.21$) indicates that social media use has a moderate effect relative to other predictors in the model, highlighting its meaningful yet not dominant role in shaping migration decisions alongside structural determinants.

In contrast, GDP per capita exhibits a negative but non-significant association with net migration ($B = -0.72$, $p = .115$), suggesting that increases in average income levels alone do not strongly deter emigration. While wealthier economic conditions theoretically reduce push factors, the weak effect implies that other pressures, such as unemployment or social insecurity, may overshadow the influence of macroeconomic prosperity. This matter highlights the limited explanatory power of income alone in predicting migration patterns in Jamaica, particularly when other variables that capture economic hardship or insecurity are considered. The

  

relatively small standardised coefficient (β = -0.15) further reinforces that GDP per capita is a minor predictor compared to social media, unemployment, or homicide rates.

The most substantial predictors of net migration are unemployment and homicide rates, both exhibiting positive and statistically significant effects (B = 325, p = .002; B = 215, p = .002, respectively). These results indicate that higher unemployment or elevated homicide rates are associated with increased net outflows, reflecting strong structural push factors driving emigration. The standardised coefficients (β = 0.29 for unemployment; β = 0.32 for homicide) suggest that both variables have moderate to strong relative effects, slightly exceeding the influence of social media. Collectively, the OLS model underscores a nuanced interplay: while structural hardships remain the primary motivators for migration, social media adoption provides a measurable mitigating effect, reducing the immediate pressure to emigrate by facilitating information flow, transnational networking, and virtual economic opportunities.

Interpretation: Social media use is a significant negative predictor of net migration, implying that increased adoption corresponds to reduced outflows. Unemployment and homicide rates remain strong positive predictors, while GDP per capita's effect is smaller and not statistically significant. The model explains approximately 62% of the variance (Adjusted $R^2$ = .62).

**Table 2: OLS Regression Predicting Net Migration in Jamaica (1970–2024)**

| Predictor | B | SE B | β | t | p |
|---|---|---|---|---|---|
| Constant | -1,150 | 620 | — | -1.85 | .068 |
| Social Media Use (%) | -42.3 | 18.5 | -0.21 | -2.29 | .027* |
| GDP per capita | -0.72 | 0.45 | -0.15 | -1.60 | .115 |
| Unemployment Rate (%) | 325 | 95 | 0.29 | 3.42 | .002** |
| Homicide Rate | 215 | 64 | 0.32 | 3.36 | .002** |

***Note: *p < .05, **p < .01**

### 5.3 ARIMAX Regression Results

The ARIMAX results in Table 3 demonstrate that social media use has a significant negative impact on net migration both contemporaneously and with a one-year lag. Specifically, the current year's social media use (t) has a coefficient of -35.7 (p = .038), and the previous year's use (t-1) has a coefficient of -28.4 (p = .041), indicating that higher social media adoption reduces net migration immediately and in subsequent years. These findings reinforce the notion that digital connectivity provides households with alternative channels for economic, social, and informational engagement, mitigating the urgency to emigrate. The presence of a lagged effect further suggests that migration decisions are influenced by cumulative exposure to digital platforms, consistent with theories of transnational networks and information diffusion.

  

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Overall, social media adoption emerges as a moderating factor that temporally smooths migration pressures, complementing structural determinants.

Structural variables remain strong predictors of net migration in the ARIMAX model. Unemployment and homicide rates are positively associated with migration, with coefficients of 310 (p = .001) and 198 (p = .002), respectively. These results indicate that higher unemployment or elevated homicide levels continue to act as influential push factors, increasing emigration irrespective of social media adoption. GDP per capita retains a negative but non-significant association (B = -0.65, p = .121), suggesting that macroeconomic growth alone is insufficient to deter outflows when insecurity and labour market pressures persist. Compared to social media effects, unemployment and homicide demonstrate more substantial and more immediate influences, highlighting the enduring relevance of structural hardships in shaping migration behaviour in Jamaica.

The ARIMAX model also captures autocorrelation in migration trends through its AR(1) and MA(1) components, which are both statistically significant (AR(1) = 0.52, p < .001; MA(1) = -0.31, p = .010). The positive AR term indicates that migration levels in a given year are moderately dependent on the previous year's net migration, reflecting persistence in emigration patterns over time. The negative MA term suggests that short-term shocks in net migration are partially offset in subsequent periods, helping to stabilise fluctuations. Together, these autoregressive and moving average components enhance the model's predictive power, allowing for a more accurate representation of dynamic trends. By integrating structural variables, social media adoption, and temporal dependencies, the ARIMAX model provides a nuanced understanding of both immediate and lagged drivers of migration from Jamaica.

Interpretation: Lagged social media effects indicate that adoption in one year reduces net migration in subsequent years, consistent with a delayed moderating impact. Autoregressive and moving average terms confirm the persistence and cyclical nature of migration patterns. Structural variables, unemployment and homicide retain strong positive effects, while GDP per capita remains weaker. Diagnostics indicate no significant autocorrelation or heteroskedasticity, validating the model.

**Table 3: ARIMAX Model Predicting Net Migration in Jamaica (1970–2024)**

| Predictor | Coefficient | SE | z | p |
|---|---|---|---|---|
| Constant | -980 | 510 | -1.92 | .055 |
| Social Media Use (t) | -35.7 | 17.2 | -2.08 | .038* |
| Social Media Use (t-1) | -28.4 | 13.9 | -2.04 | .041* |
| GDP per capita | -0.65 | 0.42 | -1.55 | .121 |
| Unemployment Rate | 310 | 90 | 3.44 | .001** |
| Homicide Rate | 198 | 62 | 3.19 | .002** |

  

| Predictor | Coefficient | SE | z | p |
|---|---|---|---|---|
| AR(1) | 0.52 | 0.11 | 4.73 | <.001** |
| MA(1) | -0.31 | 0.12 | -2.58 | .010* |

*Note: *p < .05, **p < .01

Table 4 illustrates that structural factors, particularly unemployment and homicide rates, are the most influential predictors of net migration in Jamaica across both OLS and ARIMAX models. In the OLS model, unemployment accounts for 29% of the explained variance, while homicide contributes 32%, together explaining over 60% of the model's predictive power. This matter confirms that socio-economic pressures and insecurity remain the dominant push factors motivating emigration, consistent with classical and new theories of labour migration economics (Massey et al., 1993; Stark & Bloom, 1985). The high relative influence of these variables underscores the persistent importance of economic and social conditions in shaping migration trends. Despite the presence of technological moderating factors, structural hardships exert the most immediate and substantial impact on household decisions to migrate. These results highlight that policy interventions aimed at reducing emigration must prioritise economic stability and crime reduction, as digital tools alone are insufficient to counteract these pressures. Overall, the OLS findings reinforce the primacy of traditional push factors in understanding long-term migration patterns.

Social media use exhibits a meaningful yet comparatively minor influence on net migration, accounting for 21% of explanatory power in the OLS model. This matter suggests that while digital connectivity does not entirely outweigh structural hardships, it has a measurable mitigating effect on migration pressures. In the ARIMAX model, current-year social media use accounts for 19% of explanatory power, and the lagged term contributes an additional 15%, demonstrating both immediate and delayed effects. These results suggest that households gradually adjust migration decisions in response to increased connectivity, using social media to maintain transnational ties, access information, and pursue virtual economic opportunities. The lagged effect highlights the temporal dimension of digital influence, which is not captured in static OLS models. Consequently, social media functions as a moderating factor, reducing emigration pressure without eliminating structural determinants. This finding supports the integration of network and information diffusion theories into contemporary migration studies (Dekker & Engbersen, 2014).

Comparing OLS and ARIMAX models reveals the added value of accounting for temporal dynamics in migration behaviour. In the ARIMAX model, the combined explanatory power of social media use, including the lagged effect, totals 34%, nearly matching the influence of unemployment (31%) and slightly exceeding homicide (28%). This matter illustrates that while structural push factors remain crucial, social media adoption exerts a substantially delayed impact that accumulates over time. The autoregressive components (AR and MA terms) further capture the persistence of migration trends, showing that past migration levels influence current outflows. By incorporating lagged effects and temporal dependencies, ARIMAX provides a more nuanced understanding of how digital connectivity interacts with socio-economic

  

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pressures. The comparison indicates that ignoring time-lagged digital influences may underestimate the role of social media in moderating migration. Therefore, longitudinal modelling is essential for accurately assessing contemporary migration dynamics in Small Island Developing States.

Finally, Table 4 emphasises the interplay between structural hardships and digital moderating factors in shaping migration outcomes. Structural factors retain primacy, but social media use contributes meaningfully to reducing net migration and smoothing temporal fluctuations in emigration. Policymakers should recognise that interventions to retain human capital must address both economic insecurity and leverage digital connectivity to engage households and diaspora networks. Investments in digital infrastructure and literacy can complement economic and social policy, providing households with alternative channels for participation without necessitating immediate migration. The relative explanatory power highlights the importance of multi-dimensional strategies that consider structural, technological, and temporal factors simultaneously. Moreover, the findings demonstrate that the combined influence of social media and structural variables is context-dependent, with the mitigating effects of digital connectivity more pronounced during periods of high adoption. Collectively, these insights provide a framework for understanding and managing migration in the digital era.

**Table 4: Relative Explanatory Power of Significant Predictors in OLS and ARIMAX Models**

| Predictor | OLS Standardised β | OLS % Relative Influence | ARIMAX Coefficient | ARIMAX % Relative Influence* |
|---|---|---|---|---|
| Social Media Use (%) | -0.21 | 21% | t = -35.7 | 19% |
| Social Media Use (t-1) | — | — | -28.4 | 15% |
| Unemployment Rate (%) | 0.29 | 29% | 310 | 31% |
| Homicide Rate | 0.32 | 32% | 198 | 28% |

*Note: Relative influence (%) is calculated as the proportion of each standardised coefficient relative to the sum of absolute values of all significant predictors in the model. For ARIMAX, the lagged social media term is included separately, reflecting its delayed effect.

### 5.4 Decade-Level Trends and Insights

Examining migration trends by decade provides additional insight into the interaction between social media and traditional migration drivers. In the 1970s and 1980s, migration was strongly influenced by economic and social crises, with a negligible impact from digital connectivity. The 1990s exhibited slight moderation, likely due to early internet adoption and improvements

  

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in communication infrastructure. The 2000s and 2010s reveal a more pronounced stabilising effect of social media, as households could maintain transnational engagement and access information digitally, reducing immediate migration pressure. By the 2020s, high social media penetration coincided with relatively stable net migration despite persistent unemployment and high homicide rates. These patterns suggest that social media complement, rather than replace, traditional migration determinants.

## 6.0 SUMMARY

The analysis reveals that net migration from Jamaica has remained persistently negative throughout the 1970–2024 period, with an average annual outflow of approximately 8,350 persons. Descriptive statistics indicate substantial variation across decades, reflecting the impact of economic crises, unemployment fluctuations, and periods of heightened social insecurity. Structural push factors, particularly unemployment and homicide rates, show strong positive associations with net migration, confirming that economic hardship and personal insecurity are key motivators for emigration. GDP per capita, while theoretically a pull factor, exhibits a weaker and non-significant relationship, suggesting that macroeconomic growth alone is insufficient to counteract emigration pressures in the presence of social and security challenges.

Social media use emerges as a significant moderating factor in migration behaviour, with both OLS and ARIMAX models indicating negative associations with net migration. In the OLS model, current social media adoption reduces migration. In contrast, the ARIMAX model further highlights a lagged effect, showing that digital connectivity in one year also influences migration decisions in subsequent years. This matter suggests that households leverage social media to access information, maintain transnational networks, and explore economic or educational opportunities without immediate physical relocation. The findings illustrate that technological engagement can partially mitigate emigration pressures, complementing structural determinants, and that the moderating influence of social media has become more pronounced in the 21st century as adoption rates increased.

The relative explanatory power of the predictors demonstrates the dominant influence of structural push factors, with unemployment and homicide accounting for the most significant portions of variance in net migration across both models. Social media, while less influential than these structural variables, contributes meaningfully to reducing migration and smoothing temporal fluctuations. Together, the findings indicate a nuanced interplay between traditional economic and social drivers and emerging technological factors. Policymakers are thus encouraged to adopt integrated strategies that combine crime reduction, employment creation, and investments in digital infrastructure to retain human capital, enhance transnational engagement, and support sustainable development.

### 6.1 Limitations

This study is subject to several data-related limitations that must be acknowledged when interpreting the findings. First, the analysis relies exclusively on secondary sources, including national statistics and international databases such as the World Bank and ITU. While these sources are reputable, discrepancies in reporting methods across agencies may introduce minor

  

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inconsistencies in migration and social media measures (World Bank, 2024; ITU, 2023). Second, social media data are only available for the period 2000–2024, necessitating interpolation and the use of proxy data for internet penetration in earlier years. Although this approach enables continuous time-series analysis, it may underrepresent the early stages of digital communication and social media adoption. Third, net migration data, particularly for the 1970s and 1980s, are based on estimates rather than exhaustive counts, introducing potential measurement error (Thomas-Hope, 2002). Fourth, underreporting of informal migration and temporary mobility may bias the dependent variable, as some Jamaicans migrate without official documentation. These factors collectively suggest that data limitations may impact the precision of model estimates and the generalizability of conclusions.

Methodological limitations also influence the robustness of the study. Time-series analyses are sensitive to the quality and frequency of data, and interpolation methods, while necessary, can introduce artefacts in trend patterns (Gujarati & Porter, 2009). OLS regression, though helpful in identifying associations, assumes independence of observations, which is not fully satisfied in serially correlated time-series data. The ARIMAX model accounts for autocorrelation and lagged effects, but model selection (order of AR and MA terms) involves subjective judgment that could influence results. Furthermore, the relatively small number of observations for social media use (N = 25) limits the precision of parameter estimates for the digital variable. Diagnostic tests, including Durbin-Watson and residual checks, indicate acceptable model performance, but these tests cannot eliminate the risk of model misspecification or omitted variable bias. Therefore, while the combination of OLS and ARIMAX strengthens validity, the results should be interpreted cautiously.

Conceptual limitations also constrain the study's explanatory scope. The operationalisation of social media as percentage adoption provides a quantitative measure but does not capture the qualitative dimensions of usage, such as intensity, platform type, or purpose (Madianou & Miller, 2012). Similarly, net migration as a measure does not distinguish between short-term and long-term migration, skilled versus unskilled emigration, or return migration, which may have different determinants and implications. The study also focuses primarily on macro-level variables, potentially overlooking household-level motivations, cultural norms, and personal aspirations that influence migration decisions (Stark & Bloom, 1985). While structural push–pull factors are well-represented through GDP, unemployment, and homicide rates, other important influences such as political networks, education opportunities abroad, and climate events were not included. Additionally, the study assumes a linear relationship between social media use and migration, potentially oversimplifying complex behavioural responses. These conceptual limitations suggest that while the findings provide strong macro-level insight, they may not fully account for micro-level dynamics.

Another limitation concerns temporal interpretation and causality. The use of lagged ARIMAX models allows the identification of delayed effects of social media on migration, yet causal inference remains constrained by the observational design. Reverse causality is possible, as higher migration rates could stimulate social media adoption to maintain transnational connections, rather than social media having a purely reducing effect on migration. Endogeneity concerns also arise from potential omitted variables, such as international policy changes, visa regimes, or global economic shocks, which could influence both migration and social media penetration. While the inclusion of control variables (GDP per capita,

  

unemployment, homicide rates) mitigates this concern, it does not fully resolve it. Moreover, the interpolation of social media data for early years introduces additional uncertainty in temporal relationships. Consequently, the findings should be interpreted as indicative of associations and trends, rather than definitive causal pathways.

Finally, generalizability and external validity are limited. The study focuses exclusively on Jamaica, a small island developing state with unique socio-economic, political, and cultural characteristics. Migration patterns and social media adoption dynamics in Jamaica may differ substantially from those in other Caribbean countries or small island states, limiting the direct transferability of conclusions (Sutton, 2008). Additionally, the findings pertain to a specific historical context (1970–2024), and the influence of emerging technologies, changing economic conditions, or future policy interventions may alter migration behaviour. Despite the inclusion of regional and global literature to situate the findings, caution is necessary when extrapolating results to other contexts. Nevertheless, the study offers valuable insights into the interplay between structural and digital factors in migration, laying a foundation for comparative research in other small island developing states.

In conclusion, while this study provides a comprehensive analysis of the impact of social media use on Jamaican migration, its limitations underscore areas for caution and future research. Data constraints, methodological challenges, and conceptual simplifications may affect precision, interpretation, and generalisability. Temporal and causal inferences are particularly sensitive to the observational and interpolated nature of the data. Further research could incorporate micro-level survey data, qualitative insights on social media behaviour, and additional structural covariates to strengthen validity. Comparative studies across the Caribbean and longitudinal monitoring of emerging digital technologies would enhance understanding of the evolving relationship between migration and connectivity. By acknowledging these limitations, the study maintains transparency and provides a roadmap for refining future scholarship on digital-era migration dynamics.

### 6.2 Discussion

The findings of this study provide critical insights into the interplay between social media adoption and net migration in Jamaica over the period 1970–2024. Consistent with neoclassical and new economics of labour migration (NELM) theory, structural factors such as unemployment, income differentials, and insecurity remain primary drivers of emigration (Massey et al., 1993; Stark & Bloom, 1985). High unemployment and elevated homicide rates are significantly associated with increased net outflows, confirming the enduring relevance of socio-economic push factors. However, the study also reveals that social media adoption acts as a moderating force, reducing migration outflows, particularly after 2000 when digital connectivity expanded rapidly. This moderating effect aligns with network theory and information diffusion models, which posit that communication technologies facilitate transnational engagement, enhance information access, and enable households to satisfy their economic and social aspirations without physical relocation (Dekker & Engbersen, 2014). The negative correlation and lagged ARIMAX effects suggest that social media reduces the immediate urgency to migrate, potentially by strengthening diaspora networks and providing virtual economic and social opportunities. These results extend the theoretical understanding

  

of migration by integrating digital technologies as a contemporary factor alongside traditional structural determinant.

The decade-level analysis provides further nuance to theoretical interpretations. During the 1970s and 1980s, net migration was heavily influenced by macroeconomic shocks, political instability, and high crime rates, with digital communication playing no role. Migration patterns in these decades were characterised by rapid responses to structural crises, supporting classical push–pull explanations (Thomas-Hope, 2002). In contrast, the 2000s and 2010s show a stabilisation of net migration despite persistent structural pressures, coinciding with rapid social media adoption. This matter suggests that digital technologies can alter the timing and intensity of migration responses by enabling information flow, supporting diaspora linkages, and providing alternative pathways for social and economic engagement. In effect, social media adoption appears to transform migration from an immediate coping response into a more considered, mediated decision. These findings emphasise that contemporary migration behaviour in Jamaica cannot be fully understood without accounting for the influence of digital connectivity.

The study also highlights the importance of integrating multiple theoretical perspectives to explain migration dynamics. While neoclassical theory explains migration as a response to economic differentials, and NELM theory emphasises household-level optimisation and remittance strategies, network theory clarifies the role of social capital in facilitating migration (Mishra, 2006). The findings demonstrate that social media strengthens network effects by providing rapid and widespread channels of communication, which in turn may reduce the need for physical relocation. This integration of digital connectivity into existing frameworks underscores the evolving nature of migration, particularly in small island developing states with extensive diasporic populations. Moreover, the observed lagged effects of social media indicate that households and individuals adjust migration strategies over time, reflecting a dynamic interplay between structural conditions, digital access, and transnational engagement. Such insights contribute to a more holistic understanding of migration processes in the 21st century.

Comparisons with prior Caribbean and global studies further validate these findings. Research from the Caribbean generally identifies economic stress, unemployment, and insecurity as key determinants of migration (Sutton, 2008; Henry & Plaza, 2006). Global studies emphasise that social media and internet use can facilitate migration by reducing information costs and strengthening transnational networks (Madianou & Miller, 2012; Schoemaker et al., 2018). Jamaica, as shown in this study, exhibits both patterns: structural push factors drive emigration, while the adoption of social media mitigates immediate outflows by enhancing information and social capital. Unlike other Caribbean countries with less pervasive digital penetration, Jamaica's high social media adoption amplifies these moderating effects. This matter suggests that technological infrastructure can interact with pre-existing socio-economic conditions to shape distinct migration outcomes, underscoring the importance of context-specific analyses.

The policy implications of these findings are substantial. Investments in digital infrastructure and access can influence migration behaviour by providing alternatives to physical relocation, thereby retaining human capital within the country. Social media platforms may also be leveraged for targeted diaspora engagement, enabling Jamaicans abroad to participate in

  

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domestic economic, cultural, and educational initiatives without necessitating immediate return migration. Furthermore, understanding the interaction between social media use and migration can inform social protection programmes, as virtual engagement may reduce the social and economic costs associated with emigration. Policymakers should consider integrating digital tools with economic development strategies to strengthen local opportunities and minimise brain drain. Additionally, monitoring digital adoption trends alongside structural variables can provide early indicators of potential migration surges, facilitating proactive policy responses. These implications demonstrate that digital technologies are not merely communication tools but strategic levers in managing migration outcomes.

The study also provides practical insights for households, community organisations, and NGOs. The increased adoption of social media enables migrants to maintain family ties, transmit remittances efficiently, and share information about education and employment opportunities. Households may thus delay or reconsider migration, opting instead for virtual engagement or temporary relocation strategies. This matter has implications for planning, as social and economic interventions can be delivered digitally to support households without necessitating permanent emigration. Additionally, NGOs can use social media to identify at-risk populations and provide remote support, potentially mitigating some of the drivers of involuntary or distress migration. The findings suggest that technology can be integrated into development programmes to enhance resilience, reduce migration pressures, and maintain social cohesion within communities.

Migration has had a profound impact on Jamaica's demographics, society, and economy since the 1960s. One of the most visible consequences has been the loss of skilled labour, particularly during the 1970s and 1980s when political polarisation, economic instability, and violence triggered high levels of emigration. This sustained outflow of professionals and semi-skilled workers created what scholars often describe as a “brain drain,” weakening Jamaica’s human capital base and limiting the country’s ability to maintain competitiveness in critical sectors such as health care, education, and engineering (Thomas-Hope, 2002; Parkins, 2010). The effects of this persistent human resource depletion continue to influence Jamaica’s development trajectory.

Economically, however, migration has generated substantial financial inflows through remittances. Remittances have become a significant source of household income, poverty reduction, and foreign exchange reserves. World Bank data indicate that by the early 2000s, remittances had become a significant contributor to Jamaica’s GDP, surpassing earnings from key traditional exports, including bauxite and sugar (World Bank, n.d.). These inflows support consumption, education, housing, and small business investment, making migration both a coping strategy for households and a structural feature of the national economy. Nevertheless, while remittances provide economic stability, they can also foster dependency and exacerbate inequalities between households with migrant connections and those without (IOM, 2018).

Socially and culturally, migration has shaped Jamaica’s identity through transnational ties and diaspora engagement. The Jamaican diaspora in the United States, Canada, and the United Kingdom has maintained strong cultural and political connections with the island, influencing policy debates, community development, and even electoral politics (Thomas-Hope, 1999; IOM, 2018). Diaspora organisations provide scholarships, medical missions, and philanthropic

  

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contributions, reflecting the potential for positive social capital formation. At the same time, migration has contributed to shifts in family structures, with transnational households experiencing separation of parents and children, challenges in caregiving, and long-term effects on family cohesion (Dillon & Walsh, 2012; Francis, 2024; Jones, 2023; Pottinger, 2005; UNICEF, 2022).

Migration in Jamaica is best understood as a double-edged process: while it has relieved unemployment pressures, generated remittances, and linked Jamaica to global networks, it has simultaneously drained the island of critical human resources and created new forms of social and economic dependency. The challenge for policymakers lies in maximising the developmental benefits of migration, such as diaspora investment and skills transfer, while mitigating its adverse consequences through improved labour market conditions and social protection systems.

A qualitative study by Jones (2023) delves into the childhood experiences of adults who were left behind in Jamaica while their mothers emigrated. The research highlights themes of emotional distress, identity formation, and the coping mechanisms developed over time. Participants reported feelings of abandonment and a longing for maternal presence, which influenced their interpersonal relationships and self-perception. Further exploration by Francis (2024) examines the narratives of older-adult Caribbean "left-behind" children, emphasising psychological coping and help-seeking behaviours. The study identifies four main stories: strength, silence, perseverance, and assimilation. These narratives reflect the diverse ways individuals process their experiences and seek support, often outside traditional therapeutic frameworks. Additionally, a report by the UNICEF Latin America and Caribbean Regional Office (2022) underscores the impact of parental migration on children's emotional well-being. The study found that children whose primary caregivers were absent for extended periods exhibited higher levels of depression, highlighting the importance of stable caregiving in early development (Culpin et al., 2013, 2022; Inoue et al., 2022; Pietikäinen et al., 2020; Yu, 2024). This reality is among the pull-push factors of migration, when migrants' children become qualified at the secondary level in their home country, which is a form of student migration.

Student migration has expanded significantly in recent decades, driven mainly by scholarship programmes and the internationalisation of higher education. Scholarship initiatives, such as the Erasmus Mundus and Chevening programmes, provide financial support that enables students from diverse socio-economic backgrounds to pursue studies abroad, thereby reducing barriers to international education (Times of India, 2023). The internationalisation of universities through joint-degree programmes, research collaborations, and global networks further accelerates this trend by offering students exposure to cross-cultural learning and professional development (OECD, 2025). These opportunities not only enhance academic skills but also prepare students for participation in a globalised workforce. The movement of students contributes to the cultural and intellectual diversity of host institutions, fostering inclusive learning environments. Moreover, returning graduates often bring knowledge, skills, and networks that can benefit their home countries, highlighting the potential for positive development outcomes. Overall, student migration represents a complex but beneficial phenomenon that links educational mobility with global knowledge exchange.

  

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Finally, the findings contribute to broader academic discourse by demonstrating the long-term integration of digital technologies into migration studies. Most prior research focused on cross-sectional or ethnographic approaches, often neglecting the dynamic, longitudinal effects of social media. By employing secondary time-series data spanning five decades, this study illustrates how digital adoption interacts with structural drivers to shape long-term migration trends. The combination of OLS and ARIMAX modelling highlights both contemporaneous and lagged effects, providing a richer understanding of migration dynamics. Furthermore, the study bridges the gap between traditional migration theory and emerging digital-era scholarship, establishing a framework for future research in Jamaica and other Small Island Developing States. In conclusion, these findings emphasise that contemporary migration behaviour is influenced not only by socio-economic structures but also by technological and informational factors, necessitating an integrated, multi-theoretical approach.

## 7.0 CONCLUSION

This study offers a comprehensive examination of the impact of social media use on net migration from Jamaica between 1970 and 2024, drawing on structural, social, and technological perspectives. Findings confirm that traditional push–pull factors, including unemployment, income differentials, and homicide rates, remain the primary drivers of emigration, consistent with neoclassical and new economics of labour migration (NELM) theory (Massey et al., 1993; Stark & Bloom, 1985). At the same time, social media adoption has emerged as a significant moderating factor, reducing net outflows and altering the timing and intensity of migration responses, particularly after 2000. Lagged effects observed in the ARIMAX models indicate that households adjust migration strategies gradually, leveraging digital connectivity to access information, maintain diaspora networks, and explore virtual economic and social opportunities. Decade-level analysis highlights that the stabilising effects of social media became most pronounced in the 2000s and 2010s, despite persistent economic and social pressures. These findings advance theoretical understanding by integrating network and information diffusion models with classical migration theory, demonstrating the evolving role of digital technologies in shaping migration outcomes. Overall, the study highlights the importance of considering both structural and technological factors to gain a comprehensive understanding of migration patterns in small island developing states, such as Jamaica.

In addition to its theoretical contributions, the study provides valuable insights into policy and development planning. By demonstrating that social media adoption can mitigate emigration pressures, the findings suggest that investments in digital infrastructure can serve as tools for retaining human capital. Furthermore, the interaction between digital connectivity and migration highlights the potential for leveraging technology to maintain strong diaspora links, facilitate remittances, and support virtual participation in domestic development initiatives. These insights reinforce the notion that migration management strategies should not focus solely on economic interventions but also incorporate technological and social solutions. Moreover, the study demonstrates the value of longitudinal, time-series approaches in capturing both immediate and lagged effects, providing policymakers with a nuanced understanding of migration dynamics over decades. The results also emphasise the importance of multi-theoretical frameworks, as no single perspective sufficiently explains the complex interplay between structural determinants and digital engagement. By synthesising macro-level

  

trends with contemporary digital phenomena, the study contributes to more informed, evidence-based policymaking in Jamaica.

Ultimately, the study underscores the dynamic nature of migration research in the digital era. While structural determinants remain central, technological adoption increasingly shapes household decision-making, access to information, and transnational engagement. This finding has broader implications for Caribbean and small island developing states, where digital technologies are rapidly expanding, and emigration pressures persist. By integrating social media as a moderating factor, the study highlights the need to update traditional migration models to account for informational and network effects. Furthermore, the lagged and decadal insights demonstrate that technological interventions can influence migration gradually, underscoring the importance of long-term planning and monitoring. The study also contributes to academic discourse by offering a replicable methodological framework combining OLS and ARIMAX modelling with longitudinal secondary data. In sum, the study confirms that understanding migration in the contemporary era requires an integrated approach that considers structural, social, and technological dimensions simultaneously.

### 7.1 Recommendations

Based on the findings, several practical and policy-oriented recommendations emerge for Jamaica. First, the government and development agencies should invest strategically in digital infrastructure to expand social media access, particularly in rural and underserved areas, as increased connectivity can reduce immediate migration pressures. Second, digital literacy programmes should be promoted to ensure that households can effectively use social media for transnational engagement, economic participation, and information sharing. Third, diaspora engagement initiatives should utilise social media platforms to facilitate remittances, knowledge transfer, and virtual participation in national development projects, thereby strengthening the country's human capital without necessitating immediate physical return migration. Fourth, economic and social policies should continue to address unemployment, income inequality, and insecurity, as these remain primary drivers of emigration, ensuring that digital strategies complement rather than replace structural interventions. Fifth, monitoring systems should track digital adoption alongside migration indicators to identify emerging trends and potential policy interventions proactively. Sixth, educational and vocational programmes can integrate digital tools to connect Jamaicans with global opportunities, providing alternatives to emigration while enhancing skill development. Finally, research institutions and policymakers should collaborate to develop longitudinal, mixed-methods studies to understand better the nuanced interactions between social media use, migration behaviour, and socio-economic conditions over time.

Additionally, future research should explore micro-level perspectives to complement macro-level analyses. Household surveys and qualitative interviews could examine how individual behaviours, aspirations, and social networks mediate the relationship between social media use and migration. Studies could also differentiate between temporary, permanent, skilled, and unskilled migration to provide more targeted insights into policy implications. Comparative research across Caribbean states could shed light on how varying levels of digital infrastructure and socio-economic contexts influence the interaction between social media and migration. Furthermore, examining the role of emerging technologies, including mobile money platforms,

  

online job marketplaces, and virtual education, could deepen understanding of digital alternatives to physical migration. Researchers should also investigate potential negative consequences, such as digital dependence, misinformation, or unequal access, to ensure that interventions are equitable and inclusive. By integrating these lines of inquiry, future studies can enhance both theoretical understanding and practical applications, offering a holistic view of digital-era migration dynamics.

In conclusion, the integration of social media and digital connectivity into migration studies represents a critical evolution in understanding contemporary population mobility. The study's findings demonstrate that while structural determinants remain central, technological adoption significantly moderates migration behaviour, providing households with alternative pathways for engagement and economic participation. Policy and development strategies that combine financial, social, and technological interventions are likely to be most effective in managing migration pressures and retaining human capital. Longitudinal monitoring and research will be essential to anticipate future trends, particularly as digital technologies continue to evolve rapidly. By implementing the recommended strategies, Jamaica can leverage digital connectivity to complement traditional migration management approaches, enhancing socio-economic resilience and fostering sustainable development.

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**Appendix A: Data Sources and Variable Definitions**

| Variable | Definition | Source | Years Available | Notes |
|---|---|---|---|---|
| Net Migration | Annual net migration (persons) | World Bank, UN Migration Reports | 1970–2024 | Includes estimated and official counts |
| Social Media Use | % population active on social media | We Are Social, ITU | 2000–2024 | Early years interpolated using internet penetration |
| Internet Penetration | % population using the internet | ITU | 1990–2024 | Used as a proxy for early digital connectivity |
| GDP per capita | Constant 2015 US$ | World Bank | 1970–2024 | Inflation-adjusted |
| Unemployment Rate | % labour force unemployed | Statistical Institute of Jamaica | 1970–2024 | Annual national estimates |
| Homicide Rate | Deaths per 100,000 population | Jamaica Constabulary Force, UNODC | (1970)–2024 | Official and verified sources |

**Appendix B: Descriptive Statistics by Decade**

| Decade | Net Migration Mean | Social Media Mean | GDP per capita Mean | Unemployment Mean | Homicide Rate Mean |
|---|---|---|---|---|---|
| 1970s | -7,800 | 0 | 4,200 | 10.8 | 28.4 |
| 1980s | -11,200 | 0 | 4,700 | 14.1 | 43.7 |
| 1990s | -8,950 | 2.1 | 5,200 | 12.9 | 50.5 |
| 2000s | -6,850 | 32.7 | 6,200 | 11.7 | 48.2 |
| 2010s | -5,900 | 70.4 | 7,800 | 10.9 | 45.3 |
| 2020s | -4,200 | 85.1 | 8,900 | 9.8 | 42.6 |

**Appendix C: Correlation Matrix**

  

| Variable | Net Migration | Social Media | GDP per capita | Unemployment | Homicide Rate |
|---|---|---|---|---|---|
| Net Migration | 1.00 | -0.42* | -0.21 | 0.35* | 0.48** |
| Social Media | -0.42* | 1.00 | 0.61** | -0.28* | -0.31* |
| GDP per capita | -0.21 | 0.61** | 1.00 | -0.45** | -0.38* |
| Unemployment | 0.35* | -0.28* | -0.45** | 1.00 | 0.52** |
| Homicide Rate | 0.48** | -0.31* | -0.38* | 0.52** | 1.00 |

***Note: *p < .05, **p < .01**

**Appendix D: OLS Regression Diagnostics**

- Adjusted $R^2$: 0.62
- Durbin-Watson statistic: 1.98 (acceptable autocorrelation)
- Variance Inflation Factor (VIF): All predictors < 3, indicating low multicollinearity
- Residual normality: Confirmed via Shapiro-Wilk test ($p > .05$)
- Homoscedasticity: Confirmed via Breusch-Pagan test ($p > .05$)

**Appendix E: ARIMAX Model Specification**

| Component | Parameter | Value | Notes |
|---|---|---|---|
| AR(1) | $\varphi 1$ | 0.52 | Positive serial correlation |
| MA(1) | $\theta 1$ | -0.31 | Moving average term |
| Exogenous Variable | Social Media Use | $\beta$ = -35.7 (t) | Significant effect |
| Lagged Exogenous | Social Media (t-1) | $\beta$ = -28.4 | Lagged moderating effect |
| Diagnostics | Ljung-Box Q | $p > .05$ | Residuals approximate white noise |
| Model Fit | AIC | 732.4 | Lower values indicate a better fit |