Divorce in East Java Province Indonesia from Psychosocial and Cultural Analysis : A Mixed-Method Approach Using Machine Learning

Sylviana Putri Kusuma[(1)], **Michelle Joanne Wiratama**[(2)], **Ananta Yudiarso**[(3)]
Program Studi Psikologi, Fakultas Psikologi, Universitas Surabaya, Surabaya, Indonesia [(1)(2)(3)]
ananta@staff.ubaya.ac.id[(1)]

Abstract :
This study examines divorce in East Java through a psychosocial analysis using machine learning and artificial intelligence. This investigation seeks to uncover the determinants that frequently occur in divorce cases. The study utilizes a blended methodology, integrating a review of literature, secondary data analysis from Indonesia's Central Bureau of Statistics (BPS), and qualitative interviews. To forecast divorce, machine learning approaches such as Support Vector Machine (SVM), Random Forest, Neural Network, and Decision Tree were implemented outcomes based on factors such as economic issues, infidelity, domestic violence, and gambling. The results indicate that gambling identified as a significant predictor. The Neural Network model achieved the highest AUC (0.896). The study highlights the complex interplay of psychosocial factors in divorce and underscores the importance of addressing these issues through targeted interventions.

1.   Introduction

Every couple wants the warmth of a home. The data highlights that the prevalence of divorce stands at currently increasing. Social norms indicate that divorce is increasingly perceived as neither taboo nor a dishonor within society, divorce has now evolved into an increasingly commonplace occurrence. (Matondang, 2014). Divorce marks the termination of a marital union. When a couple decides not to pursue their marital journey further, they may request a formal separation. In the process of divorce, the couple must determine how to divide the assets accumulated throughout their marriage, (such as houses, cars, furniture or contracts) and they must also address the financial responsibilities and obligations of raising their children. Every country enforces its own regulations and legal framework concerning divorce, requiring the couple to seek resolution through the court system. In some religious teachings, divorce is wrong or referred to as a social deviation because marriage is considered sacred that must be maintained, but what can now be seen is that sometimes divorce is also no longer a form of deviation because there are so many cases of domestic violence, infidelity, or severe incompatibility, divorce can be a solution to avoid long suffering.

Fundamentally, the factors contributing to divorce are highly unique and intricate, with each family's issues differing significantly from others. The factors that lead to divorce in the household are the first economic factors, The current economic demands compel both partners to engage in work to fulfill their financial necessities, This situation often leads to conflicts due to income disparities, particularly when the husband is unemployed. In addition, there are several factors that cause a marriage to divorce, including infidelity, lack of offspring, domestic violence, family disharmony, and differences in views or principles between husband and wife (Dalvi & Hermaleni, 2022).

This research has high significance because it examines divorce as an increasingly prevalent social issue, indicating a violation of marital norms within society. The consequences of divorce is not only felt by the divorcing partners but also affects children, extended families, and the surrounding community. In analyzing this phenomenon, This research relies on secondary data sourced from the Central Statistics Agency (BPS) as its foundational basis. The utilization of secondary data allows researchers to obtain comprehensive and accurate information regarding trends, incidence rates, and causes of divorce, so that the research findings can serve as a reference in formulating more targeted prevention strategies and solutions.This study addresses divorce as an increasingly prevalent social phenomenon that reflects shifts in marital norms and family structures within contemporary society.

Divorce has multidimensional consequences that extend beyond the separating partners, affecting children's psychosocial development, extended family dynamics, and broader community well-being. From a psychosocial and public policy perspective, a systematic understanding of the structural patterns and determinants of divorce is therefore essential for informing evidence-based family interventions and social planning. The study utilizes secondary data obtained from the Central Statistics Agency (BPS), which provides comprehensive and reliable population-level information on divorce trends, incidence rates, and associated sociodemographic factors. While conventional statistical methods are effective for hypothesis testing and linear inference, they are often limited in capturing complex, non-linear relationships and high-dimensional interactions among variables. To address these limitations, this study applies machine learning techniques as an analytical extension to traditional approaches. Machine learning offers several methodological advantages, including the ability to model non-linear patterns, handle large-scale datasets with numerous predictors, and identify interaction effects without strong a priori assumptions. These capabilities are particularly relevant for divorce research, where psychosocial, economic, and contextual factors interact dynamically. By leveraging machine learning algorithms, this study aims to uncover latent structures and predictive patterns that may remain undetected through conventional statistical models, thereby enhancing explanatory depth and predictive accuracy. The findings are expected to contribute to a more nuanced understanding of divorce dynamics and support the development of targeted, data-driven prevention strategies and policy interventions.

As reported by BPS, the number of divorces by province and factor in 2023, especially for East Java Province, is described as the factors of adultery (579 households), drunkenness (404 households), madat (38 households), gambling (415 households), the departure of one of the parties (5. 986 households), imprisonment (173 households), polygamy (132 households), domestic violence (1,636 households), disability (54 households), continuous disputes and quarrels (35,940 households), forced marriage (163 households), apostasy (156 households), economy (23,176 households). However, from the figures provided by BPS, it was found that the province with the highest divorce rate was West Java, with 91.16. Then followed by East Java province with a total of 79,248. And the last is Central Java province with 68,133. Previous studies indicate that divorce in Indonesia is predominantly characterized by contested divorce, most of which is initiated by wives (Manna, 2021; Manna et al., 2021). Building on this evidence, the present study focuses specifically on divorce cases in East Java Province, a region that consistently reports one of the highest divorce rates according to data from the BPS.

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Although West Java recorded the highest absolute number of divorces nationally in 2023, East Java ranked second, followed closely by Central Java (BPS, 2023). The concentration of divorce cases in East Java is particularly noteworthy not merely because of its magnitude, but due to the underlying psychosocial and contextual factors reflected in the data. BPS statistics indicate that divorces in East Java are predominantly associated with persistent marital conflict, economic hardship, domestic violence, and spousal separation, suggesting complex interactions between relational stressors and structural socioeconomic conditions. Furthermore, East Java represents a distinctive context for divorce research due to its large population size, high population density, and marked social and cultural diversity across urban and rural areas. These characteristics create a multifaceted psychosocial environment in which marital relationships are shaped by economic pressures, gender roles, cultural expectations, and family norms. Consequently, focusing on East Java allows for a more nuanced examination of divorce as a social and psychological phenomenon, offering insights that are relevant for both regional policy development and broader national family studies.

From a psychological perspective, divorce is not only understood as a legal process, but also as a complex psycho-social phenomenon with profound impacts on individual mental health, family dynamics, and child development. Divorce often causes both acute and chronic stress for the couples experiencing it, triggering various emotional responses such as anxiety, depression, guilt, or even trauma. Additionally, pre-divorce conflict and post-divorce instability can worsen psychological conditions, especially if not managed with adaptive coping mechanisms. Research in family

psychology shows that the causes of divorce are often related to failures in emotional regulation, ineffective communication, or fundamental personality mismatches. Factors such as infidelity or domestic violence, as mentioned in BPS data, not only reflect breaches of marital commitment but also disruptions in attachment and trust, which are the foundations of a relationship. Meanwhile, economic pressures can exacerbate conflicts through financial strain, which reduces the couple's ability to resolve issues constructively.

From sociological and anthropological perspectives, law reflects societal values and functions as an institutional framework that regulates social life. As a dynamic instrument, law is expected not only to maintain social order but also to adapt to evolving social, economic, and political contexts. In Indonesia, divorce regulations within the national legal system continue to face challenges, particularly due to tensions between formal legal provisions—such as those outlined in the Compilation of Islamic Law—and prevailing religious and cultural interpretations within society (Hamid et al., 2022). These tensions highlight that legal norms do not operate in isolation but interact with deeply rooted social practices and belief systems. Resistance to divorce regulations often emerges when legal rules are perceived as misaligned with community norms, underscoring the importance of culturally sensitive legal frameworks. From a psycho-social perspective, such legal–cultural misalignment may shape individuals' marital decision-making processes, conflict resolution patterns, and perceptions of legitimacy and fairness. Consequently, understanding divorce requires not only a legal or sociological lens but also a psychological examination of how individuals and families navigate normative conflicts within their social environments.

2. Methods

This research adopts a mixed-method approach, combining literature review, secondary data analysis, and qualitative techniques. The first phase includes a systematic literature review conducted in accordance with the PRISMA 2020 guidelines (Page et al., 2021) to uncover significant trends, theoretical frameworks, and gaps within existing research. The PRISMA framework promotes transparency by thoroughly recording how studies are selected, the criteria used to determine their eligibility, and the procedures for extracting data. To identify key trends, theoretical frameworks, and research gaps relevant to the present study. Using keywords perceraian (divorce) sosiologi (sociology) psikologi (psychology) anthropologi (anthropology) budaya (culture), with searches performed across Scopus, Web of Science, and Google Scholar. Inclusion criteria consisted of peer-reviewed empirical studies published between 2010-2024 that examined divorce, psychosocial determinants, or family dynamics, while studies lacking empirical evidence or relevance to the study context were excluded.

The second phase analyzes secondary data from Indonesia's Central Bureau of Statistics (BPS) utilizing machine learning (ML) techniques through Orange Data Mining version 3.1, with the implementation of several ML algorithms. such as Support Vector Machine (SVM), Random Forest, Neural Network, and Decision Tree. SVM is a supervised learning method specifically developed for tasks involving classification and regression, particularly effective when dealing with high-dimensional datasets. Random Forest is an ensemble method that integrates multiple decision trees to improve predictive accuracy and reliability Neural networks, modeled after the architecture of human neurons, are capable of recognizing intricate patterns in data (Lecun, 2015). Decision Tree is a tree-like model for decision-making based on feature splits (Quinlan, 1986).

The researcher analyzed model evaluation metrics using Area Under the Curve, which assesses classifier performance across different threshold levels; Classification Accuracy, depicting the ratio of accurately predicted instances; and the F1-Score, which represents the harmonic mean of precision and recall. Precision measures the proportion of true positive outcomes among all predicted positives, Recall, often referred to as sensitivity, reflects the fraction of true positives compared to the total number of actual positive cases. Matthews Correlation Coefficient is a balanced metric to measure for binary classification. Feature importance is calculated to identify key predictors. The data was analyzed from BPS 2024 from 38 regency/municipality in East Java. The target of prediction was the number of divorce and the feature or predictor were economic hardship, infidelity, domestic violence, and gambling behavior.

The third phase involves qualitative research, where three key participants Qualitative research emphasizes understanding context, meaning, and human experiences (Creswell & Poth, 2018). The interview method used in this article was semi-structured interviews. The researcher has prepared a

list of questions to be given to the respondents, but the questions will lead to perspectives of psychology, anthropology, sociology, and culture. The researcher can also develop questions based on issues raised by the respondents. The characteristics of participants that used in this study are males and females, aged 20 to 30 years, and from East Java. We recruited three participants using researcher network.

3. Results
Literature review

PRISMA stands for Preferential Guidelines for Reporting Systematic Reviews and Meta-Analyses, which means a tool guide or framework used to conduct research on systematic reviews and meta-analyses. One of the main components of PRISMA is a flow diagram (PRISMA Flow Diagram) that describes the systematic study selection process, from identification, screening, eligibility assessment, to final study inclusion. This diagram records the number of studies found from various sources and the reasons for studies being excluded from the analysis, thereby increasing transparency and clarity in reporting the results of systematic reviews.

The stages of the PRISMA Flow diagram are systematic, including the identification stage, screening stage and included stage. The identification stage is collecting and identifying all relevant study records from various sources, such as academic databases and registries, as well as other sources such as grey literature or expert recommendations. At this stage, all initial search results are recorded, including any duplications found, before further screening is carried out. This stage aims to collect as many studies as possible that potentially meet the systematic review criteria. Next is, the screening stage is to review the headings and summaries of all identified records to eliminate those that do not align with the specified inclusion criteria. During this stage, duplicate records are removed, and irrelevant studies are filtered out based on their titles and abstracts. While eligible, All articles were checked to ensure that they met the inclusion criteria and aligned with the objectives of this study. The final stage of selecting studies to be analyzed and reported in the results of a systematic review is the included stage.

In compiling a systematic literature review, it is very important to document each stage of the search and selection of articles in a transparent manner. This journal utilizes the PRISMA flowchart to illustrate the literature selection process, which includes the stages of identification, screening, eligibility assessment, to determine which studies are finally included in the journal. The PRISMA flowchart used in this journal is shown in the following section.
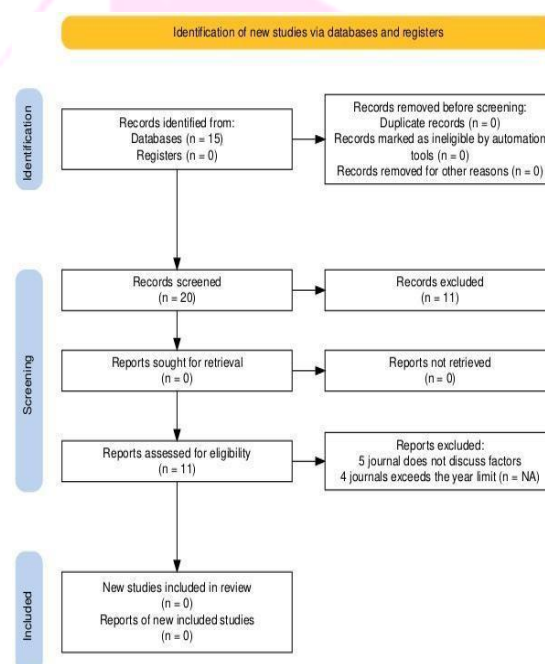

Figure 1. Prisma 2020 guideline

Table 1. Previous Research

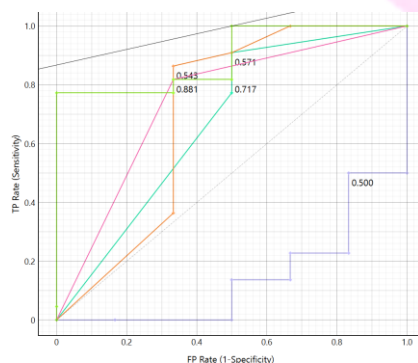| Researcher (Year)	Method	Key Findings
Oiladang, C. S. (2020)	Literature Review	Divorce is examined through three main sociological perspectives: social facts, social definitions, and social behavior, all of which are shaped by prevailing societal norms. Although often perceived as a social threat, divorce can also function as a pathway to improving individual well-being.
Wijayanti, U. T. (2021)	Quantitative Method	Most divorce plaintiffs were young women with low educational attainment, unemployed, married for less than five years, and having one child. During the COVID-19 pandemic in Banyumas Regency, economic hardship emerged as the primary driver of divorce.
Mauliddina, S., Puspitawati, A., Aliffia, S., Kusumawardani, D. D., & Amalia, R. (2022)	Systematic Review (PRISMA)	Divorce during the COVID-19 pandemic was influenced by demographic and socio-economic factors, significantly affecting family dynamics and children's behavior. Economic disruption was identified as the dominant trigger of marital conflict leading to divorce.
Krisnawati, M., Windrawanto, Y., & Rahadian, M. S. (2020)	Qualitative Method	Early-age divorce was caused by internal factors such as marital unpreparedness, poor communication, economic problems, and domestic violence, as well as external pressures including family interference. Divorce resulted in maternal stress and disrupted parenting patterns.
Santoso, H. (2019)	Qualitative Method	Divorce among families of migrant workers (TKW) was driven by economic strain and poor communication, as well as infidelity and family intervention. Consequences included family fragmentation and children's emotional closeness to only one parent.
Yunus, M. R. K. (2024)	Juridical–Sociological Study	Divorce outside the court system occurs due to complicated legal procedures, high costs, limited legal literacy, and social burdens. Such divorce reflects a complex interaction of social, cultural, and power relations, highlighting the importance of post-divorce spousal responsibility.
Dalvi, I., & Hermaleni, T. (2024)	Descriptive Qualitative Study	Divorce in Bukittinggi was caused by internal factors such as economic problems, domestic violence, and continuous conflict, as well as external factors including infidelity. Infidelity and persistent conflict were identified as the primary reasons for divorce.
Al Basyiroh, M. K., & Afif, A. (2024)	Descriptive Qualitative Study	Divorce resulting from early marriage was associated with forced marriage, unintended pregnancy, lack of financial support, spousal abandonment, abusive behavior, jealousy, emotional instability, and lack of mutual respect between partners.
Syalwatyarsa, K., & Abdullah, M. N. A. (2021)	Quantitative Method	Divorce due to infidelity mediated by social media was more prevalent among younger generations with high digital engagement. Preventive strategies include reducing social media use, strengthening marital communication, increasing shared time, and reinforcing religious values.
Nurhalisa, R. (2021)	Systematic Literature Review	Divorce is influenced by demographic factors (age at marriage, marital readiness), socio-economic factors (financial stress, income imbalance), as well as educational and cultural dimensions. Prevention efforts include delaying marriage age and providing premarital education.
Arfaizar, J., Hak, N., Yusdani, & Chasanah, L. (2020)	Qualitative Method	Divorce is shaped by cultural misunderstandings regarding gender roles within patriarchal societies. Gender inequality is socially constructed, whereas Islamic teachings emphasize equality between men and women except in biological roles.

Secondary Data Analysis

Orange data mining is an algorithm used to process data as a way to find new information and knowledge. Orange data mining can be used to analyze and visualize data (Azizah, 2023). According to the findings from data analysis utilizing Orange Data Mining, it shows that Among the various machine learning models evaluated, their ability to predict divorce cases varied in accuracy. Of the five models implemented, including Neural Network, Support Vector Machine (SVM), Random Forest, AdaBoost, and Decision Tree, the Neural Network model showed the best performance with the highest AUC (Area Under the Curve) value of 0.896. This high AUC value indicates that the Neural Network model has an excellent ability to distinguish between couples at risk of divorce and those who are not.Meanwhile, Random Forest and AdaBoost showed stable results across various evaluation metrics like accuracy, precision, and recall were employed. However, SVM, despite having high precision and recall values, produced a very low AUC value (0.144), indicating class bias or imbalance in the data.

In addition, based on the results of the feature importance visualization used to identify the contribution of each variable in predicting divorce, it was found that gambling is the most significant variable with the highest contribution value of 0.19. This indicates that gambling behavior has a dominant influence on the risk of divorce. If this factor is removed from the model, the prediction accuracy will decrease drastically. Therefore, it can be concluded that in addition to an effective prediction model, gambling variables become a key indicator in assessing the potential risk of divorce based on this research.
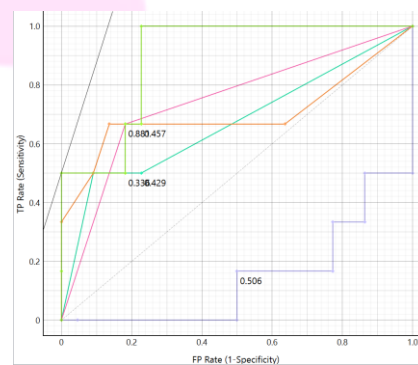
Table 2. Matrix Evaluation

Model	AUC	CA	F1	Prec	Recall	MCC
Tree	0.670	0.821	0.815	0.812	0.821	0.438
Random Forest	0.739	0.821	0.815	0.812	0.821	0.438
SVM	0.144	0.857	0.827	0.879	0.857	0.531
AdaBoost	0.742	0.786	0.796	0.814	0.786	0.440
Neural Network	0.896	0.786	0.786	0.786	0.786	0.364

It can be seen that the Neural Network model provides the best results with the highest AUC value of 0.896, demonstrating the high effectiveness of this model in distinguishing between couples who are likely to experience divorce and those who are not. Although other models such as Random Forest and AdaBoost show balanced performance, the SVM model has a very low AUC despite having high precision and recall values, which reveals that there is an imbalance in the social data being analyzed.

Figure 2. ROC low level

Figure 3. ROC high level

Based on the results of the receiver operating characteristics (ROC) analysis using orange data to predict divorce cases, one of the models that has low classification performance is SVM or Support Vector Machine. If the ROC curve is close to the diagonal line, it means that the model or often called AUC (areass under the curve) does not have good discrimination ability. So it can be concluded that low AUC means that the model is not able to distinguish well between couples who will divorce due

to gambling and those who will not.

This ROC (Receiver Operating Characteristic) graph displays the performance of several classification models compared based on sensitivity (True Positive Rate) in relation to the false positive rate (False Positive Rate). It can be seen that the green curve shows the best performance, achieving an AUC (Area Under the Curve) value of 0.880. This means that the model has a very high capability to discern between positive and negative classes. The high AUC indicates that the model can accurately predict couples who may face divorce due to problem gambling, as factors such as gambling habits, emotional stress, financial problems, and distrust can be important indicators.Based on the results of Feature Importance, it was found that the gambling factor has a value of 0.19, which means that the gambling factor is the highest and most important result in predicting divorce outcomes, if the gambling factor is removed, the prediction performance will decrease drastically. Therefore, the gambling factor shows how dominant it is in divorce.

Qualitative inquiry
General perception of divorce

Divorce is a social phenomenon that is increasingly common in society today, in line with the rising number of marriages and shifts in family values. Amid rapid social change, many perceptions of divorce can change. For some people, divorce is considered a failure or even a disgrace, but for others, it is understood as self-protection and a step to maintain mental well-being. To understand divorce more clearly, society needs to better comprehend divorce in the legal, emotional, and social contexts. Based on an interview with Siti:

> *"Divorce is perceived as a legal process; however, it also entails emotional, psychological, social, and even economic consequences. Divorce is still largely viewed as a negative phenomenon."* This view was also expressed by Susi, who described divorce as *"a process in which a married couple separates."*

Both sources understand and interpret divorce not only as a legal process, but also as an emotional and social decision. The perception of society is still very simplistic, especially in environments that uphold family values. However, some respondents interpret divorce as a legitimate choice if the relationship is unhealthy.

Factors Causing Divorce

Divorce that occurs in a household certainly has many supporting factors involved. The causes are quite diverse, ranging from internal conflicts such as poor communication, to external pressures including social norms and the economic conditions of the family. Each couple will bring different experiences and backgrounds, so the causes of divorce cannot be equated from one to another. In the interviews conducted, respondents revealed several reasons that are the main triggers for divorce. The results of the interview with Siti and Budi can be found that:

> *"Character incompatibility, lack of communication, infidelity, domestic violence, and economic problems are among the main causes. These are often accompanied by persistent conflict, pressure from one's partner, and pressure from the family."* This was further clarified by Susi, who stated*, "If the partner is unable to provide leadership or if there are differences in religious beliefs, these factors can also contribute to divorce."*

Various internal and external factors contribute to a household's potential for divorce. Conflicts such as poor communication and incompatibility are very dominant, followed by other factors such as economic issues and domestic violence. Differences in views regarding values or religion also play a role in creating differences between partners. This indicates that divorce does not occur due to a single issue, but rather from a buildup of unresolved problems.

Psychological and Emotional Conditions During Divorce

The process of divorce not only has legal and social impacts, but it also brings deep psychological issues for the individuals experiencing it. The decision to end a marriage is usually followed by very complex emotional pressures, such as anxiety, guilt, and fear of the future. These psychological feelings arise due to previous influences, which can include support systems and personal conditions. From the interview results, the emotional conditions experienced during divorce can vary greatly, ranging from feelings of satisfaction and calmness to suffering or fear. The results of the interviews conducted with Siti, Susi, and Budi:

> *"The condition is emotionally charged and unstable, characterized by stress, feelings of guilt, and anxiety."* Another participant noted, *"There is fear about having to face life alone, but there is also a sense of relief when the partner is unable to lead the relationship in a positive direction."* Additionally, it was emphasized that *"emotions can become a primary factor, particularly when past trauma is involved."*

The divorce process creates psychological pressure on someone who is experiencing the issues. Emotional instability often occurs during the divorce process, especially if the divorce factors are due to domestic violence or infidelity. However, there is a positive aspect in the form of a sense of satisfaction and liberation from a toxic relationship. Therefore, divorce can also be one way to recover emotionally.

Public Perspectives and Social Norms

The views of society and social norms play an important role in shaping individuals' responses to and understanding of divorce. In some areas that still adhere to traditional values, divorce is often seen as a moral and social failure, even becoming a stigma that significantly impacts certain aspects, especially for women. Pressure from the surrounding environment can affect someone's decision to maintain an unhealthy marriage in order to preserve their image or honor. The interview results show that these social norms often become obstacles for individuals to make rational decisions for their own welfare. From the interviews conducted with Budi and Siti, it can be found that:

> *"Divorce is considered shameful and often becomes a subject of public gossip. There is strong pressure to avoid divorce in order to preserve the family's good name, and prevailing social norms continue to constrain individuals' decisions to pursue marital dissolution."*

The public's view of divorce is still dominated by negative thoughts or understandings. This is evident from the pressure to maintain a household even in unhealthy conditions. Traditional social norms are still very strong, especially in environments with traditional cultural values. Society tends to judge rather than understand, causing couples to often feel ashamed to acknowledge their problems.

Gender Inequality in Divorce

Divorce not only impacts interpersonal relationships, but also provides opportunities for others to engage in direct gender discrimination. In a patriarchal society, divorced women face greater social pressure compared to men. They are viewed as failures, unable to fulfill their roles as wives, or are blamed for the household's failure. Meanwhile, men are more easily excused and do not experience social pressure. Interview results show that perceptions of men and women in the context of divorce are heavily influenced by persistent gender inequality and bias. Interview results from Siti:

> *"Women are more frequently perceived as failures, disobedient, or incapable of managing the household, whereas men are more often*

> *excused for marital breakdowns. When women initiate divorce, they*
> *are commonly viewed in a negative and unfavorable manner."*

There is a gender disparity in the perception of divorce. Women are more often subjected to social stigma, both in terms of morality and identity. Men are generally more excused or escape social judgment. This reflects the inequalities that still exist, placing a psychological burden on women in the decision-making process regarding divorce.

The Influence of Culture, Religion, and Media

The Influence of Culture, Religion, and MediaCulture, religion, and media are three social factors that greatly influence the public's perspective on divorce. Communities that uphold traditional and religious values often view divorce as a violation of marriage norms and family honor. Meanwhile, the media also shapes public opinion, both through positive information and sensationalism that reinforces societal understanding. Furthermore, from the interviews with Siti and Budi, it was found that religion, media, and culture each have their own influences on divorce.

> *"Religion teaches the importance of preserving marriage, yet it also*
> *allows room for separation when the relationship no longer ensures*
> *well-being. The media sometimes portrays divorce as a scandal,*
> *while cultural norms tend to frame divorce as a disgrace that*
> *tarnishes the family's reputation."*

Cultural and religious factors are dominant forces in shaping public opinion on divorce. On one hand, religious teachings emphasize commitment, while on the other hand, they also provide understanding that divorce is permissible if the relationship is unhealthy. Modern media reinforces these two understandings. Therefore, it is necessary to approach media and education that fosters empathy to create a balanced perception.

Hope and Attitude towards Divorce

In facing the issue of divorce, individual hopes and attitudes become important indicators to see the direction of future changes. Although stigma remains strong, there is hope for a new awareness that begins to prioritize mental and emotional well-being. The sources in the interviews showed a more supportive and open attitude towards divorce, emphasizing the importance of emotional support, a safe space to talk, and objectivity in decision-making. This reflects a more humanistic and empathetic value in addressing divorce in the modern era. Then regarding hopes and attitudes towards divorce, Siti and Budi also responded that:

> *"Society should be more open and empathetic. If a friend is*
> *considering divorce, I would aim to be a safe and supportive space*
> *for sharing their experiences, helping them view the situation*
> *objectively rather than judging them."*

The speaker's express hope for a social change that is more supportive and non-judgmental. They emphasize the importance of emotional support from the surrounding environment. This indicates the emergence of a more supportive society, if provided with proper education and understanding regarding divorce.

Based on interviews with three informants, this research reveals a plethora of diverse yet complementary perspectives regarding their views on divorce. Divorce is understood as a legal process that ends the bonds of a marriage, but it can also have impacts in many areas, such as emotional, psychological, social, and economic. Each informant stated that the main factors leading to divorce stem from incompatibility of character, lack of communication, infidelity, domestic violence (DV), and economic issues. The informants agreed that the decision to divorce is often accompanied by very complex emotional conditions, such as stress, guilt, and anxiety about the future, although in cases of unhealthy or toxic relationships, divorce can actually provide a sense of relief and be a step towards self-preservation. The views of the surrounding community towards divorce tend to be

negative, especially in traditional environments, where divorced women are more likely to face negative discussions or perceptions compared to men. Social norms and cultural values often force couples to stay in unhealthy marriages just to preserve family reputation or the harmony of the household they are in, even though this can potentially harm the mental health of one or both parties. Media and religion play an ambivalent role, as on one hand, they broaden awareness about the importance of individual happiness, but on the other hand, they reinforce rigid views through religious perspectives. From an educational standpoint, divorce is often seen as a key to developing a more empathetic and rational understanding of divorce.

4. Discussion

The integrated findings from the literature review, secondary data analysis, and qualitative interviews demonstrate that divorce is a multifaceted phenomenon shaped by structural, interpersonal, and psychosocial dynamics. Consistent with prior literature, divorce is not merely a legal event but a complex social process embedded in emotional, cultural, economic, and normative contexts. Previous studies emphasize that marital dissolution often emerges from the accumulation of unresolved conflicts, economic stressors, and normative pressures rather than from a single causal factor. The secondary data analysis using machine learning techniques extends this understanding by identifying gambling behavior as a dominant predictor of divorce at the population level. This finding suggests that gambling functions not only as an isolated behavioral issue but also as a catalyst that intensifies other marital stressors, including economic instability, interpersonal conflict, and emotional neglect. Unlike conventional statistical approaches, the machine learning models were able to capture non-linear interactions, indicating that gambling frequently co-occurs with broader patterns of financial strain and chronic conflict, thereby increasing the likelihood of marital breakdown.

These quantitative findings are strongly reinforced by the qualitative data. Interview narratives reveal that gambling is rarely perceived as a standalone cause of divorce; rather, it is experienced as part of a broader constellation of destructive behaviors, including poor communication, infidelity, domestic violence, and persistent conflict. Informants described how gambling exacerbates emotional instability, erodes trust, and places significant psychological pressure on spouses, often leading to stress, anxiety, guilt, and fear of the future. This convergence between machine learning results and lived experiences strengthens the validity of gambling as a critical psycho-social risk factor in divorce.

Furthermore, qualitative findings highlight the powerful role of social norms, gender inequality, and cultural expectations in shaping divorce decisions. While gambling and other stressors may objectively undermine marital stability, individuals—particularly women—often delay or avoid divorce due to stigma, patriarchal norms, and fear of social judgment. This explains why gambling may emerge as a strong statistical predictor: its effects are frequently prolonged and compounded over time, as social pressures discourage early intervention or separation. The gendered stigma identified in interviews aligns with existing literature that documents unequal moral and social burdens placed on divorced women, intensifying their psychological distress during the decision-making process.

Religion, culture, and media further mediate how gambling-related marital problems are interpreted and managed. While religious teachings emphasize marital commitment, they also provide moral justification for divorce in cases of persistent harm. Media representations simultaneously normalize divorce and reinforce stigma, creating ambivalent social messages. This ambivalence contributes to emotional conflict among individuals experiencing gambling-related marital distress, as reflected in the interviewees' mixed feelings of fear, guilt, relief, and emotional liberation. Taken together, the integrated findings suggest that divorce—particularly when gambling is involved—should be understood as the outcome of cumulative psychosocial strain rather than isolated moral or legal failure. The alignment between literature, predictive modeling, and qualitative narratives underscores the need for multidimensional divorce prevention strategies that address gambling behavior, economic vulnerability, emotional regulation, and social stigma simultaneously. From a psychosocial and policy perspective, interventions that focus solely on legal resolution without addressing these underlying dynamics are unlikely to be effective in reducing divorce risk or supporting individual well-being.

In the cultural context of East Java, there are four main subcultures, namely Arek, Mataraman, Pandhalungan and Osing that influence social dynamics in households. The Arek subculture

(covering Surabaya, Malang and surrounding areas) is known to be open, expressive and permissive, which in some situations may encourage tolerance of risky behaviors such as gambling. In contrast, the Mataraman subculture, which is more closed and upholds strict moral values, can create high social pressure, thus exacerbating household conflict if one partner is involved in gambling practices. The Pandhalungan subculture, as a blend of Javanese and Madurese cultures, has a strict and religious character, so it tends to respond strongly to deviant behavior such as gambling. Meanwhile, the Osing community in Banyuwangi, which highly values tradition and spirituality, often considers divorce a disgrace, even though the root causes of domestic problems such as gambling are the main triggers of domestic tensions.

The factor of gambling as a high cause of divorce in East Java cannot be separated from the socio-cultural conditions of the community that tend to be permissive of such behavior, especially in areas with expressive cultural characters such as Arek and Pandhalungan. Based on BPS data in 2023, gambling was among the top five causes of divorce with 415 recorded cases. Through machine learning analysis, gambling even became the most dominant predictor of divorce, with a contribution score of 0.19. This shows that the practice of gambling is not just a deviant habit, but has become a systemic and far-reaching pattern of behavior in the household. Despite its direct negative impact on household harmony - such as draining finances, triggering conflicts, and damaging spousal trust - gambling is still often considered a "man's habit" or a common form of entertainment in society. The deep-rooted patriarchal culture in some regions makes such deviant behavior easier to tolerate when committed by men, while women who try to get out of the situation face social stigma. The lack of education on the psycho social impact of gambling, as well as weak law enforcement against this illegal practice, exacerbates the perception of gambling as normal. Therefore, cultural interventions and community education are important steps to change this perspective, so that gambling behavior is no longer considered normal, but rather recognized as a factor that destabilizes households and social life. Research from Indonesian contexts demonstrates a clear link between gambling behavior and marital instability. Aziz (2024) found online gambling addiction to erode family financial stability and trust, thereby increasing conflict that culminates in divorce. Similarly, Utami et al., (2025) showed that financial problems, emotional distance, and loss of trust resulting from gambling were major triggers for divorce in modern families. Legal research also indicates that gambling-related marital issues are acknowledged as valid grounds for divorce under both Islamic and positive law in Indonesia (Afroo & Sary, 2025). From a family law perspective, gambling-induced conflicts challenge marital obligations and protect women's rights in court proceedings. Moreover, Tima and Harry (2025) highlighted the direct impact of gambling addiction on economic instability and emotional violence, reinforcing its role as a psychosocial risk factor for divorce. National statistical analyses further corroborate these findings, showing that divorce cases attributed to gambling have increased significantly, particularly in provinces such as East Java (Pirdaus et al., 2024).

Based on interviews with several informants, it was found that local culture in East Java still strongly emphasizes the importance of maintaining the integrity of the household in order to preserve the family's good name. In a social environment that upholds traditional values, divorce is often considered a moral failure, especially when it is filed by the woman. Informants stated that women who sue for divorce tend to receive negative views from the community, because they are considered disobedient or unable to maintain household harmony. In a patriarchal cultural structure, men who commit offenses such as gambling or having an affair are often more tolerated, while women who try to leave an unhealthy relationship face social pressure. This shows that there is an imbalance in gender perceptions in addressing divorce. There is also a view that divorce is a shameful last resort, even if the relationship has been dominated by conflict, violence or chronic economic problems. In other words, cultural pressures often lead individuals, especially women, to delay or avoid divorce even when the household is no longer psychologically or socially healthy.

From a sociological and psychological perspective, gambling can trigger prolonged conflict, drain family finances, undermine trust between spouses, and even trigger violence. Interviews with several respondents showed that incompatibility, economic problems, and spouses' bad habits were the main causes of divorce. However, the gambling factor seemed more prominent as it is addictive and difficult to control without professional help or adequate social support, and is often associated with other factors that exacerbate the situation. Thus, divorce in East Java is a phenomenon that is not only triggered by one single factor, but is the result of the interaction of various emotional, social,

economic and cultural aspects. Communities that still have a negative view of divorce, especially against women, need to be educated to be more empathetic and open to social reality. The results of this study confirm the importance of community-based understanding such as premarital education and mental health counseling as a more humane and effective preventive effort (Arfaizar et al., 2023).

Study limitations include the strong reliance on participants' subjective perspectives in the qualitative component, potential constraints in the validity and scope of variables available in the secondary data derived from BPS (Statistics Indonesia), and the inherent complexity of divorce in East Java, which is shaped by diverse cultural, religious, and social contexts, thereby limiting the generalizability of the findings.

5. Conclusions

This research concludes that divorce is a fairly complex phenomenon and is influenced by various internal and external factors, such as constant fighting, economic problems, domestic violence, infidelity, and gambling which is proven to be the most significant predictor factor through machine learning analysis with the Neural Network model (AUC 0.896). The mixed-method approach used, analyzing BPS data, PRISMA systematic literature, and interviews, reinforces that the causes of divorce are interrelated. The data also shows that divorce is prevalent in East Java due to the high number of conflicts and social pressures.

From a psychological and social perspective, divorce has a huge impact on the mental health of individuals, with the emergence of stress, anxiety, and trauma, although in certain cases divorce also provides a sense of relief and self-recovery. Social views from society, especially towards women, are still strong due to the influence of patriarchal culture and traditional norms. But from the interviews, there is hope for a more empathetic and open social change. So divorce does not always mean failure, but can be a healthy choice to maintain emotional and mental well-being.

6. CRediT Authorship Contribution Statement

Sylviana Putri Kusuma: Conceptualization, Introduction, Data Curation, Investigation, Project administration, Resources, Software, Writing original draft, and writing review & editing. **Michelle Joanne Wiratama**: Conceptualization, Interview, Discussion, and Conclusion. **Ananta Yudiarso**: Supervision, Writing-review & editing.

7. Declaration of Competing Interest

The authors declare that they have no known competing financial interests, professional affiliations, or personal relationships that could have appeared to influence the research process, data interpretation, or the conclusions presented in this manuscript. All analyses and interpretations were conducted objectively and independently, without any external pressure or conflict of interest.

8. Declaration of Generative AI and Assistive Technologies in the Writing Process

During the preparation of this manuscript, the authors utilized generative AI and assistive technologies exclusively for language editing purposes, including grammar correction, sentence restructuring, and enhancement of academic readability. These tools were not used to generate research ideas, analyze data, or draw conclusions. The authors take full responsibility for the originality, accuracy, integrity, and scientific content of this article.

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10. Ethical Approval

This study was conducted in accordance with established ethical standards for research involving human participants. Ethical approval was obtained prior to the commencement of the study, and all participants provided informed consent after receiving a clear explanation of the research objectives and procedures. Confidentiality, anonymity, and the voluntary nature of participation were strictly upheld throughout the research process.

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12. References

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