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CONTENTS

Positioning Political, Social, and Fantasmatic Logics of Neoliberal Ideology and Counteracting Humanist Ideals in an Extended Multi-Level Framework

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Abstract: Discussed is a multi-level framework of complex and dynamic normative forces shaping contemporary societies. Building blocks include critiques of neoliberalism, (psycho-)analytic social psychology, and radical humanist ethics. Extending an existing model of political, social, and fantasmatic logics of neoliberal ideology, societal, organizational, and psychological structures and processes are subjected to dialectical analysis. The proposed model positions dimensions of neoliberal economistic ideology versus humanist ethical ideals as antipodes on three levels (macro, meso, micro) and with respect to three domains of relatedness (identity, interactions, institutions). On the societal macro-level, neoliberal political logics of individualism, competition, and instrumentality oppose humanist ideals of individuation, solidarity, and emancipation. On the organizational meso-level, social logics of neoliberal workplaces prescribe self-reliance, competition, and rationalization, while humanistic management claims self-actualization, community, and transformation. On the individual micro-level, psychoanalytic theory suggests that fantasmatic neoliberal logics of success, superiority, and submission are antithetical to humanist values of evolution, equality, and empowerment. Drawing on social character theory, the framework shows, how neoliberal ideologies influence modes of relatedness towards oneself, others, and authorities, resembling ego-oriented, market-driven, and authoritarian tendencies. Humanist ideals are positioned as countervailing re-civilizing ethical forces. Linking psychoanalytic theories and theorizing on ideologies, the model offers a dynamic framework of the corrosive effects of neoliberal political economy as well as a basis for envisioning and mobilizing potentials for radical humanist transformation.

Keywords: Neoliberal Ideology, Humanist Ideals, Analytic Social Psychology, Psychodynamics, Social Character Theory, Societal Transformation

Introduction

The objective of this contribution is to elaborate and extend a model of neoliberal ideology (Bal & Dóci, 2018), based on notions of radical humanism (Brien, 2011; Durkin, 2014; Saleem et al. 2021) and (psycho-)analytic social psychology (Brunner et al., 2013; Parker & Hook, 2008; Funk, 2024). The underlying purpose is developing a dialectic understanding of counteracting normative undercurrents shaping the political-economic, social-institutional, and psychodynamic structures of society, work organizations, and subjects (Glynos, 2008, 2011; Foster, 2017). This undertaking builds on previous analyses, literature reviews, and theoretical developments (Hornung & Höge, 2019, 2021, 2022, 2024; Hornung et al., 2021). Rooted in classic economic theorizing that constitutes the ideological basis of capitalism, neoliberalism has become the globally dominant (hegemonic) political-economic doctrine (Plehwe et al., 2007). The contradictory and anti-humanist internal logic of this interest-guided system of ideas and practices has been extensively analyzed and criticized (Beattie, 2019; Giroux, 2005; Harvey, 2007; Haskaj, 2018; LaMothe, 2016; Larner, 2000). For instance, neoliberalism has been framed as a set of political and economic practices, a paradigm for reorienting public policy and programs, a hegemonic ideological project, a mode of psychological control or "governmentality", and a specific state form, designed to advance the particular interests of capital owners, investors, top-level managers, and their political agents (Plehwe et al., 2007; Springer, 2012). Neoliberalism, it has been argued, strives for unlimited scope and power of global (financial) markets and transnational corporations,

worldwide commerce and consumerism, and dismantling of public services and social welfare systems (Harvey, 2007; Wacquant, 2009). It normalizes the supreme rule of the interests of global economic elites through a totalization of the logic of money and markets, generating luxurious wealth and unrivaled power for a small minority, while "externalizing" harmful effects and social costs, thus imposing increased demands, risks, austerity, and poverty upon the fast majority (Beattie, 2019; Giroux, 2005; LaMothe, 2016; Plehwe et al., 2007). Recapitulating earlier arguments, this contribution is guided by ideas of radical humanism, as represented by social-philosopher and psychoanalyst Erich Fromm (Durkin, 2014; Funk, 2024). Integrating the dialectic distinction of genuine ethical ideas versus distorted, interest-guided ideology with basic tenets of social character theory, neoliberal economistic doctrines and counteracting humanist ethical concepts are contrasted across the nested levels of abstract political (societal), applied social (organizational), and embodied psychological "fantasmatic" (individual) logics (Hornung & Höge, 2021, 2022). The resulting multi-level framework represents dominant (hegemonic), and latent (potential) aspects of the normative fabric of advanced capitalist societies, institutions, and subjects. In the following, its theoretical basis will be outlined.

Counteracting Logics of Neoliberal Ideology and Humanist Ideals

Social character theory posits that socio-economic structures of society shape psychological orientations and motivational tendencies, such that people eventually want to do what they ought to do for the system to function effectively (Fromm, 2010; Funk, 2010; Hornung et al., 2021; Maccoby, 2002). Combining the Marxian dictum that material conditions determine human consciousness with the dynamic conception of personality in psychoanalytic theory, the collective social character results from an interaction between dominant socio-economic conditions and libidinous dispositions of individuals (Brien, 2011; Brunner et al., 2013). The unique character of any given person is a function of the dynamic interaction between systemic social character tendencies and individual psychological predispositions, partly depending on socio-economic status or social class as well as person-specific socializing influences (Maccoby, 2002). Fromm has identified ideal types of social character in historical phases of the capitalist political-economic system, such as the hoarding, receptive, authoritarian, and marketing character (Fromm, 2010; Harris, 2019). Later, the ego-oriented character was identified as a complementary type in advanced capitalist societies governed by neoliberal hegemony (Funk, 2010, 2024; Foster, 2017). Accordingly, societies can be evaluated with respect to the extent that they permit and promote, or inhibit and undermine the realization of human potentials with regard to physical, social, and psychological well-being and health, including personality development, higher levels of consciousness, and self-actualization. Advanced capitalist societies are described as "pathological", promoting destructive (e.g., egoism, greed, rivalry) and impeding productive character orientations (e.g., altruism, dedication, personal development). Largely compatible with this assessment, the model by Bal and Dóci (2018) postulates individualism, competition, and instrumentality as political logics of neoliberalism. These abstract political logics are assumed to operate on the level of public policy and societal institutions (e.g., labor laws, market deregulation), but also translate into the applied social logics of hierarchically nested lower-level institutions, specifically, management and employment practices of work organizations (Catlaw & Marshall, 2018). These, in turn, are suggested to influence the mindsets of individuals through psychodynamic processes termed fantasmatic logics (e.g., idealized narratives, aspirations). Several social (e.g., contractualization, quantitative assessment) and fantasmatic logics (e.g., meritocracy, perpetual gains, progress) associated with neoliberalism have been suggested (Bal & Dóci, 2018). However, it is unclear, how these reflect or relate to the three core political doctrines of individuals, competition, and instrumentality. In earlier contributions, the authors have started addressing this issue, using the focal model of ideology to critically analyze and evaluate psychological research on flexible workplace practices (Hornung & Höge, 2019). Individualism, competition, and instrumentality were seen as mirrored in the applied social logics of

management practices emphasizing employee self-reliance (e.g., contingent employment), tournament situations or contests (e.g., internal labor markets), and economic rationalization (e.g., work intensification). Corresponding logics on the individual level were identified in fantasies of perpetual success (e.g., outstanding performance and achievement, excellence and exceptionality), superiority (e.g., outperforming and dominating others, winner-loser mentality), and submission under the rules of money and markets governing neoliberal capitalism (e.g., fulfilling social roles, seeking acceptance and status, tolerating inequality and injustice). The present contribution elaborates this suggested multi-level model (Hornung & Höge, 2022) through the dialectic extension and elaboration of complementary antipodes to neoliberal economism by discussing counteracting sets of oppositional political, social, and fantasmatic logics, based on ideas of radical humanism (Brien, 2011; Durkin, 2014; Saleem et al., 2021; Vitus, 2017). Suggested antagonistic ethical concepts counteracting neoliberal political logics on the societal level are radical humanist ideas of individuation (Rowan, 2015), solidarity (Wilde, 2004), and emancipation (Alvesson & Willmott, 1992). Accordingly, on the organizational level of workplace practices, these higher-level concepts manifest in applied social logics of self-actualization at work (e.g., personalized developmental tasks), common good or community (e.g., sharing resources), and social transformation (e.g., organizational democracy and participatory change). Focusing on individualized work and employment conditions, suggested ideological antipodes were used as an analytic grid to contrast the humanistic ideal of employee-oriented management practices that contribute to or facilitate psychological wellbeing, health, and personal development (Aktouf, 1992) with the opposing anti-type of a labor political power strategy, reproducing neoliberal agendas of divisiveness, austerity, and economic performativity (Hornung & Höge, 2019). On the individual level, fantasmatic logics of neoliberal ideology were contrasted with humanistic aspirations of evolution, equality, and empowerment, discussed in the context of fulfillment of psychological needs for competence, relatedness, and autonomy (Koole et al., 2019). Taken together, these fantasmatic representations are part of the psychological deep-structure and foundation of the higher-level political and social logics underlying societal and economic institutions. The resulting dialectic multi-level model is displayed in Table 1. Entries are allocated to three levels, each containing references to relationships to self, others, and authorities. The latter taxonomy is introduced as an additional structuring element, based on radical humanist theorizing on social embeddedness of identity, interactions, and institutions, reflecting the own person, other people, and structures of power as central and interdependent foci of socio-psychological relatedness (Brunner et al., 2013; Parker & Hook, 2008; Funk, 2024). In the following, the three levels (macro, meso, micro) of political, social, and fantasmatic logics of neoliberal ideology and humanist ideals are presented in a cursory fashion, including preliminary definitions of constructs and associated processes of influence. A more developed account will be provided in the full-length article.

Table 1. Counteracting Logics of Neoliberal Ideology and Humanist Ideals

Counteracting Paradigms	Neoliberal Ideology	Humanist Ideals
Political Logics (Macro-level)	● Individualism ● Competition ● Instrumentality	● Individuation ● Solidarity ● Emancipation
Social Logics (Meso-level)	● Self-reliance ● Contests ● Rationalization	● Self-actualization ● Community ● Transformation
Fantasmatic Logics (Micro-level)	● Success ● Superiority ● Submission	● Evolution ● Equality ● Empowerment

Source: Based on Hornung and Höge (2022)

Political, Social, and Fantasmatic Logics Relating to Self, Others, and Authorities

Political, social, and fantasmatic logics describe complementary normative components of comprehensive belief systems, referring to the societal macro-level, organizational meso-level, and individual micro-level (Bal & Dóci, 2018; Hornung & Höge, 2022; Vitus, 2017). The first are more abstract, underlying political-economic principles and broader socio-cultural values, the second are applied, manifesting in the design of concrete workplace practices, the third are implied or embodied, influencing psychodynamic processes, motives, and orientations (Glynos, 2008, 2011; Hornung et al., 2021). As described above, on each level, economistic neoliberal ideology, reifying humans for the sake of market forces and capital accumulation (Giroux, 2005; LaMothe, 2016), are contrasted with humanist ideals, emphasizing inherent worth, potential, and centrality of humans as ends in themselves (Brien, 2011; Durkin, 2014; Saleem et al., 2021). On each level, identity of the focal person, interactions with other people, and authority of institutions of power are differentiated as important domains of social-psychological relatedness. On the societal macro-level, the three core political logics of neoliberal ideology, individualism, competition, and instrumentality, outlined by Bal and Dóci (2018), have been contrasted (Hornung & Höge, 2022; Hornung et al., 2021) with counteracting radical humanist ideas of individuation (Rowan, 2015), solidarity (Wilde, 2004), and emancipation (Alvesson & Willmott, 1992). Reflecting antagonistic modes of relatedness to self, others, and authorities (identity, interactions, and institutions, or person, people, and power) within the frameworks of neoliberalism and humanism, these six constructs are preliminarily described in Table 2.

Table 2. Counteracting Political Logics at the Societal Macro-Level

Domains of Relatedness	Self (Identity / Person)	Others (Interactions / People)	Authorities (Institutions / Power)
Political Logics of Neoliberal Ideology	Individualism: Naturalization of individual self-interest and attribution of full responsibility for one's own life situation; shift of societal risk toward individual members	Competition: Markets as best way to ensure progress and optimal allocation of resources in all areas of society; competition and rivalry as inherent to human nature	Instrumentality: Objectification and utilization of humans for particular interests according to cost-benefit calculations for maximizing performance and profits
Political Logics of Radical Humanist Ideas	Individuation: Emphasis on conditions for personality development and self-transcendence; overcoming self-interest in meaningful social contexts and relationships	Solidarity: Empathy, supportive social relationships, and collaboration with others; sharing resources with those facing adversity; recognizing the universality of human experience	Emancipation: Exposing, resisting, overcoming and transforming unbalanced and limiting power-dependence relationships; liberation from oppression and exploitation

Source: Based on Hornung and Höge (2022)

On the organizational meso-level, broader and abstract political logics are theorized to manifest in social logics underlying concrete work, employment, and management practices (Bal & Dóci, 2018). As outlined above, this segment of the framework has been previously applied by Hornung and Höge (2019), based on organizational theory, to analyze two antagonistic modes of workplace flexibility as either a manifestation of labor political power-tactics, primarily serving economic employer interests of work intensification and extensification (Catlaw & Marshall, 2018; Telford & Briggs, 2022), versus as an employee-

oriented application of principles of humanistic management (Aktouf, 1992; Melé, 2016). Accordingly, social logics of the neoliberal workplace construe relationships to self, others, and authorities in terms of self-reliance, contest situations, and economic rationalization (Hornung & Höge, 2019). For instance, this manifest in contingent employment and employee responsibility for skills and career development, performance-based rewards, and perpetual work intensification (Delbridge & Keenoy, 2010). In contrast, social logics of humanistic management draw on ideals of self-actualization of the person, sense of community among people, and social transformation of power structures. Exemplary practices are job security and self-determination at work, collective decisions and non-hierarchical collaboration, democratic structures, and ecological orientations (Aktouf, 1992; Alvesson and Willmott, 1992; Koole et al., 2019). The underlying two antipodal tripartite sets of constructs are preliminarily described and compared in Table 3.

Table 3. Counteracting Social Logics at the Organizational Meso-Level

Domains of Relatedness	Self (Identity / Person)	Others (Interactions / People)	Authorities (Institutions / Power)
Social Logics of the Neoliberal Workplace	Self-reliance: Contingent employment arrangements with limited commitments; employees responsible for performance, health, learning, and careers	Contests: Competitive allocation of performance-based rewards to individual employees based on zero-sum, winner-take-all-type tournaments	Rationalization: Focus on increasing economic performance and efficiency; work intensification; employees as human resources
Social Logics of Humanistic Management	Self-actualization: Secure working conditions to support individual and collective autonomy, self-determination, learning, and socio-moral personality development	Community: Collective decisions and orientation towards consensus, and common good; collaboration, diversity and pluralism; consideration of individual needs	Transformation: Alternative organizing beyond hierarchies, command, and control; participatory and democratic structures and processes; socio-ecological sustainability

Source: Based on Hornung and Höge (2022)

On the individual micro-level, drawing on psychodynamic theorizing, fantasmatic ego-oriented, marketing-oriented, and authoritarian logics of the neoliberal social character (Fromm, 2010; Funk, 2010, 2024; Maccoby, 2002) are contrasted with corresponding facets of radical humanist consciousness. Forms of relatedness to one's own self, other people, and authorities are represented by antipodal constructs of success versus evolution, superiority versus equality, and submission versus empowerment. Accordingly, individualistic conceptions of self-reliance, competitive contests, and instrumental rationalization demand individual orientations towards outstanding achievement and outperforming others, while submitting to the "rule of the game", dictated by economic institutions and market forces (Layton, 2014). In contrast, notions of individuation and self-actualization, solidarity and community, and emancipation and transformation, are assumed to promote prosocial orientations towards personal development, egalitarianism, and mobilization of co-active power to challenge and change systems of oppression, exploitation, and inequality (Hornung et al., 2021). Concomitantly, psychological introjection and internalization of the respective fantasmatic logics is assumed to provide the basis for actively supporting organizational practices and societal systems reflecting neoliberal versus humanist social and political logics, in a dynamic of reciprocal determination, termed "elective affinities" (Jost et al., 2009). Thus, people actively reproduce organizational and societal structures corresponding to their

ideological preformation (Springer, 2012; Vitus, 2017). Preliminary definitions of the respective psychodynamic constructs, resembling fantasmatic logics relating to self, others, and authorities, at the individual level, are provided in Table 4.

Table 4. Counteracting Fantasmatic Logics at the Individual Micro-Level

Domains of Relatedness	Self (Identity / Person)	Others (Interactions / People)	Authorities (Institutions / Power)
Fantasmatic Logics of Neoliberal Social Character	Success: Idealizing excellence, outstanding achievements, and exceptional performance; overcoming odds of the situation	Superiority: Focus on outperforming and dominating others, winner-loser mentality; inequality as result of individual differences and effort	Submission: Responding adaptively to market forces; conforming with social roles, seeking status and recognition; system-justification
Fantasmatic Logics of Radical Humanist Consciousness	Evolution: Psychological growth and personality development; knowledge, self-insight, higher-level social and ecological consciousness	Equality: Realizing universality of human experience, dignity, and interconnectedness; perspective-taking for social justice and material equality	Empowerment Active role in radical social reform, challenging and overcoming limiting power structures, oppression, exploitation, and inequality

Source: Based on Hornung and Höge (2022)

Preliminary Conclusions

The suggested model offers a dialectic dynamic framework of neoliberal ideology and counteracting humanist ideals on different levels and with reference to different domains of socio-psychological relatedness. Transcending simplifying assumptions of one-directional cause-and-effect relationships, the underlying socio-psychodynamic analysis assumes complementary dialectic interdependencies, cascading across systems-levels via bi-directional processes of top-down and bottom-up influence. On the individual, psychological level, these dynamics manifest in self-reinforcing processes of (self-)selection and socialization that have been analyzed in terms of reciprocal determination and elective affinities (Jost et al., 2009), shaping social character structures with regard to affective and behavioral patterns, adopted belief systems, and states of consciousness (Foster, 2017; Hornung & Höge, 2021). Starting point of this analysis on the societal macro-level is a trinity of neoliberal political logics, prescribing individualism, competition, and instrumentality as core principles governing economically advanced Western capitalist societies (Bal & Dóci, 2018). In a dialectic analysis, these economistic and socio-morally corrosive political logics are contrasted on the societal macro-level with radical humanist ideas of individuation, solidarity, and emancipation, representing antipodal "productive" relationships to self, others, and authority.

On the organizational meso-level, neoliberal political logics are inherent in workplace practices embodying social logics of self-reliance, contests, and rationalization, whereas humanistic management practices emphasize oppositional principles of self-actualization, community, and transformation (Hornung & Höge, 2019). These more applied social logics, in turn, mediate or channel the socializing forces of political logics from the societal level towards shaping unconscious (sub- or semi-conscious) psychodynamic imageries and narratives (fantasmatic logics) on the individual micro-level (Glynos, 2008, 2011; Vitus, 2017). Based on psychoanalytic theory, the latter are exemplified by archetypal fantasies of success, superiority, and submission (Layton, 2014), reflecting ego-oriented, marketing-

oriented, and authoritarian components of the neoliberal social character (Foster, 2017; Funk, 2010, 2024). These complexes are theoretically opposed to antithetical ideals of humanist consciousness, incorporating productive orientations towards personal evolution, equality, and empowerment. On the other hand, aggregated fantasmatic logics also exert an upward influence in shaping institutions and practices on the organizational meso-level as well as on the political-economic macro-level.

Pathological tendencies of neoliberalism manifest particularly drastic in the sphere of work, notably, in management practices capitalizing on employee self-reliance and self-interest, instead of job security, meaningful activities, and employer responsibility; competition for jobs and pay on internal and external labor markets, instead of focusing on collaboration and the common good; and subjection of workers to a multitude of interventions, from supervision and performance assessment, motivational trainings to restructuring and change management (Bal & Dóci, 2018; Hornung et al., 2021). Importantly, these measures are first and foremost instrumentally aimed towards achieving economic objectives (e.g., efficiency and effectiveness) that are not primarily benefitting those who are mobilized for purposes not aligned with their own best interest (Jost et al. 2003). Increasing hegemonic proliferation of a managerial ideology of "unitarism" notwithstanding (Delbridge & Keenoy, 2010), employment is characterized by inherent conflicts of interest on the societal (e.g., labor protection), organizational (e.g., participation, benefits), and individual (e.g., time, effort) level.

While, in theory, humanistic management can buffer these conflicts by introducing additional layers of employee-oriented workplace practices (Aktouf, 1992; Melé, 2016), implementation of flexible work and employment practices within a neoliberal paradigm provides a vehicle for economic rationalization, work intensification and extensification, and divisive anti-union labor-political power tactics (Hornung & Höge, 2019). However, whereas the social logics of neoliberal workplaces and counteracting attempts of humanistic management have previously been the focus of attention, future research needs to address more in-depth not only the political-economic macro-level, but particularly the individual micro-level, based on psychodynamic and psychoanalytical theorizing (Foster, 2017; Funk, 2024; Glynos, 2011; Hornung & Höge, 2021). The humanist principle of synergistic unity of insights regarding external and internal social realities, emphasizes the complementarity of the (externally directed) denaturalization and critique of societal ideologies with (internally directed) critical self-reflection and psychological development (Fromm, 1962).

The presented analysis intends to contribute to both, based on cultivating radical humanist philosophy to counteract socially corrosive tendencies of neoliberal economistic rationality (Hornung & Höge, 2022). This explicitly includes challenging the mental (cognitive and affective) representations of the normative structure of neoliberal concepts suggested here. Certainly, actual lived experiences include a fuller range of physical, psychological, and spiritual aspects, which provide guidance on how to adopt, enact, and promote humanist ideals on a personal level. Although primarily abstract and academic in nature, the present preliminary considerations seek to provide a starting point for initiating and supporting such efforts at changing neoliberally contaminated unconscious mindsets (LaMothe, 2016). Yet, it is clear that such an undertaking requires not only theoretical and discursive elaboration, but even more so dialogical and practical deliberation in the context of academic activism and engaged scholarship (Rahbari et al., 2024). What is at stake is nothing less than the normative basis for a civilized society, where social responsibility and ecological sustainability are prioritized over profits and power, serving capital accumulation and rule of political-economic elites.

Acknowledgments

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An Examination of Digital Validation-Seeking Behaviors in Adolescents as Precursors to Romance Scamming

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Abstract: Digital validation-seeking behaviors have emerged as a significant psychological precursor to online deception, particularly in the context of romance scams. This study examines how adolescents and young adults, motivated by social media engagement and algorithmic reinforcement, develop patterns of manipulative online behavior that can escalate into financial fraud. Empirical evidence suggests that 67% of individuals with lower self-esteem engage in deceptive self-presentation, while 40% of cyber fraudsters report early experiences with digital deception during adolescence. The forensic cyberpsychology framework applied in this study explores the developmental trajectory of romance scammers, identifying key influences such as peer reinforcement, social comparison mechanisms, and the Dark Triad personality traits. This study employs a narrative literature review and thematic analysis to synthesize research on psychological, technological, and social factors contributing to romance scamming. Findings reveal that algorithm-driven validation loops normalize manipulative behaviors, reinforcing deception as a viable strategy for online engagement. Economic stressors and lack of parental oversight increase the likelihood of individuals transitioning from validation-seeking to full-scale financial fraud. The results underscore the role of AI-driven deception tools, hyperpersonal communication techniques, and algorithmic biases in facilitating scammer evolution. Key recommendations include integrating digital literacy programs, enforcing algorithmic transparency, and strengthening interdisciplinary collaboration to mitigate the rise of validation-driven cyber deception. This study contributes to forensic cyberpsychology by mapping the developmental progression from digital validation-seeking to romance scamming, illustrating how algorithmic reinforcement, peer influence, and self-enhancement behaviors escalate into manipulative online deception. By identifying early-stage psychological and technological risk factors, this research informs AI-driven fraud detection models, digital literacy initiatives, and algorithmic transparency measures to mitigate the normalization of deception in digital environments.

Keywords: Romance Scams, Forensic Cyberpsychology, Validation-Seeking Behaviors, Social Media Deception, Dark Triad Traits, Cyber Fraud, Algorithmic Biases

Introduction

Background and Context

Romance scams have emerged as a pervasive cybercrime, exploiting emotional vulnerabilities for financial gain (Hani et al., 2024). Victims of these scams often become emotionally invested in fabricated relationships, leading to significant financial losses (Ahmed, 2024). According to the Federal Trade Commission (FTC, 2024), romance scam reports in the United States surged by 25% between 2022 and 2023, with an average loss per victim exceeding $4,400. Global financial losses from romance scams exceeded $1.3 billion in 2023, marking a significant increase from previous years. Cybercrime data indicates a 40% increase in social media-linked romance scams among individuals aged 18-35 (Ahmed, 2024), underscoring the need for a deeper understanding of perpetrator behaviors. Despite considerable attention paid to victimology in romance scams, limited research exists on the developmental pathways that lead individuals to become perpetrators (Soares & Lazarus, 2024). The absence of empirical analysis on how psychological tendencies, particularly digital validation-seeking behaviors, contribute to cyber deception leaves a critical gap in forensic cyberpsychology research (Mustafa et al., 2024a). Social media platforms, designed to amplify engagement-driven behavior, play a major role in shaping

adolescent psychological patterns, reinforcing narcissistic tendencies and manipulative behaviors in individuals susceptible to Dark Triad traits (Ahmad et al., 2024). Research has extensively analyzed fraudulent online behavior in adulthood; however, few studies have systematically examined how these behaviors develop in adolescence (Burrell et al., 2023). During adolescence, individuals undergo crucial identity formation and social development, becoming highly sensitive to peer feedback, social comparison, and external validation mechanisms (Ohu & Jones, 2025b; Pérez-Torres, 2024b). The pathway to cyber deception and financial fraud often begins in adolescence, shaped by early social validation-seeking, digital reinforcement loops, and familial influences on personality development (Ohu & Jones, 2025b; Mustafa et al., 2024a). Environmental factors, such as parental oversight, socioeconomic stress, and familial conflict, contribute to the emergence of machiavellian and deceptive behaviors in some adolescents, who may experiment with online deception as a means of social survival, as posited by (Ohu & Jones, 2025a; Ceroni & Yalch, 2024), who also stated that validation syndrome is the key driver of deceptive behavior in adolescents. Moreover, current research has explored the Dark Triad traits in cybercriminals, but the role of digital validation-seeking as a developmental antecedent to financial fraud remains underexplored (Ahmad et al., 2024). The rise of social media as a platform for these scams is evident, with 40% of romance scam victims having been contacted through social media (FTC, 2024). As shown in Figures 1 and 2, Google Trends data indicate that web searches for "Romance" peaked at 85% between December 29, 2024, and January 4, 2025, while "Romance scams" web searches peaked at over 75% between January 12 and 18, 2025 (Google Trends, 2024a, 2024b). These findings illustrate the growing public concern and awareness surrounding this cybercrime.
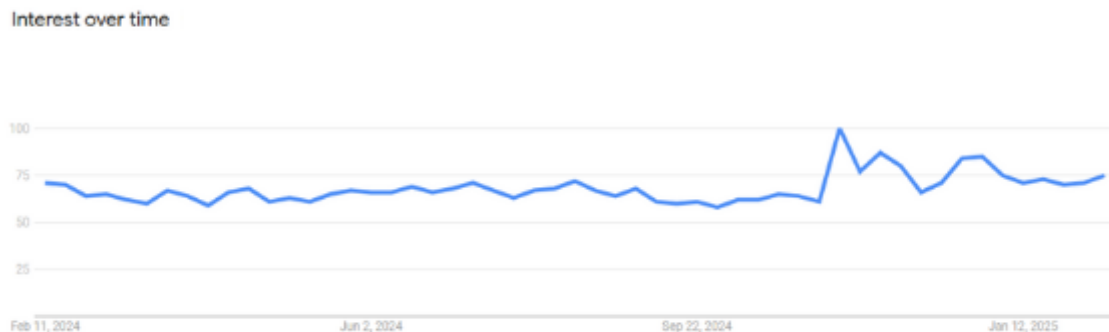

Figure 1. US Web search interests over time for Romance on Google
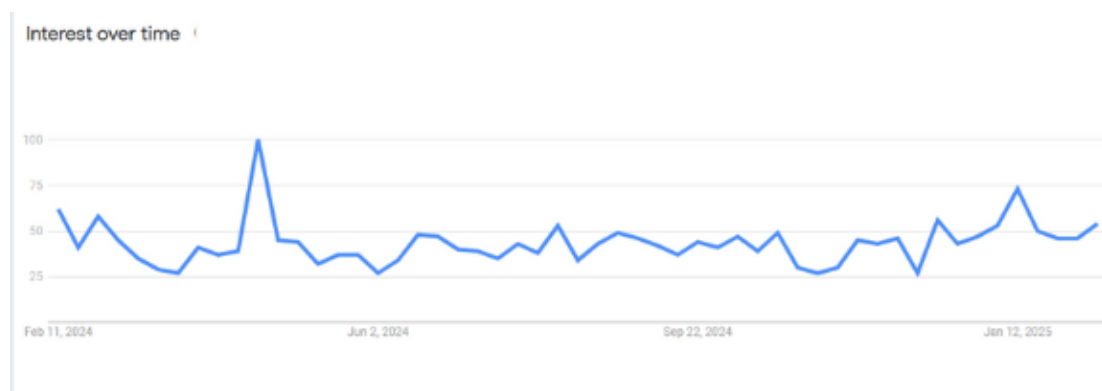*Source: Google Trends (2025a)*

Figure 2. US Web search interests over time for Romance scam on Google
Source: Google Trends (2025b)

A review of current literature underscores the necessity of examining these formative digital behaviors. The prevalence of cyber deception among individuals with high social comparison tendencies, combined with algorithmic reinforcement, calls for deeper forensic investigation into the developmental precursors of romance scamming (Bokolo & Liu, 2024; Pellegrino & Stasi, 2024). Addressing these research gaps is crucial for constructing intervention strategies that target digital literacy, psychological resilience, and algorithmic accountability to disrupt the early formation of deceptive behaviors (Ahmed, 2024; Dvir, 2023).

Problem Statement

The rise in romance scams has become a significant societal concern, with measurable financial losses and emotional distress. In 2023, global financial losses from romance scams exceeded $1.3 billion (FTC, 2024). Reports from the Federal Bureau of Investigation (FBI, 2023) and the Internet Crime Complaint Center (IC3, 2023) highlight a concerning increase in scam-related complaints involving adolescents and young adults, signaling a potential shift in offender demographics. The general problem is that digital environments may reinforce deceptive behaviors through algorithmic validation loops, potentially normalizing manipulation and fraud among adolescents (Funkhouser, 2022). Studies suggest that persistent engagement in digital validation-seeking behaviors may desensitize individuals to ethical concerns and foster manipulative cyber tendencies (Hani et al., 2024; McGovern et al., 2024). The specific problem is that existing forensic research lacks comprehensive early detection tools and intervention strategies to address the psychological and environmental factors that shape manipulative online behaviors during adolescence (Tang, 2024; Volkova & Sorokoumova, 2024; Xiang, 2024). This research aims to bridge this critical gap by examining how digital validation-seeking behaviors contribute to the emergence of romance scammers. By analyzing psychological, social, and algorithmic influences, this study will provide forensic cyberpsychology with data-driven insights for developing fraud prevention programs, digital intervention models, and social media policy reforms.

Purpose of the Study

The purpose of this study is to conduct a narrative literature review of current literature and a thematic analysis to explore how digital validation-seeking behaviors, particularly during adolescence, contribute to the development of manipulative cyber behaviors that culminate in romance scams. By examining the psychological and social mechanisms underlying these behaviors, this study seeks to identify key cognitive, social, and algorithmic factors that reinforce deception in digital environments (Chapagain et al., 2024; Fominykh, 2024; López et al., 2024). This research specifically focuses on adolescents and young adults highly engaged in social media and digital platforms where validation-seeking behaviors are prevalent (Hani et al., 2024; McGovern et al., 2023). Through a forensic cyberpsychology approach, this study investigates how algorithmic exposure, peer reinforcement, and financial incentives contribute to the transition from self-validation to cyber deception (Ohu & Jones, 2025a). The findings aim to bridge the gap in forensic cyberpsychology research by offering evidence-based insights for digital literacy programs, fraud prevention initiatives, and policy interventions designed to mitigate early-stage manipulative behaviors online (FTC, 2024; IC3, 2023).

Rationale, Originality and Significance of the Study

Romance scams pose a significant societal and economic concern, yet existing research focuses on victim vulnerabilities rather than the psychological and developmental pathways of scammers (FTC, 2024; IC3, 2023). This study aims to fill the empirical gap by investigating how digital validation-seeking contributes to the emergence of romance scammers. This research is one of the

first to explore the link between digital validation-seeking behaviors and the early psychological development of online scammers. By applying social learning theory (Amsari et al., 2024; FTC, 2024) to forensic cyberpsychology, this study examines how algorithmic exposure, peer reinforcement, and financial incentives shape manipulative behaviors over time. The study has critical implications for forensic cyberpsychology, digital fraud prevention, and cybersecurity policy. The findings provide evidence-based insights for law enforcement, AI-driven fraud detection models, digital literacy programs, scam victim support services, and policymakers. By bridging the gap between psychological theory, digital behavior analysis, and cybersecurity, this study advances forensic cyberpsychology research and offers practical solutions for fraud prevention, law enforcement training, and social media policy reform.

Literature Review

This literature review aims to identify, select, and analyze relevant studies to explore the role of digital validation-seeking behaviors as precursors to romance scamming and examine the influence of adolescent social media engagement, personality traits, and algorithmic reinforcement in shaping deceptive online behaviors. A comprehensive and methodologically rigorous approach was chosen to ensure a thorough assessment of the existing body of literature. The overarching research question guiding this review is: "How do digital validation-seeking behaviors contribute to the progression of deceptive online interactions in adolescents leading to romance scamming?" This question aligns with the broader problem statement, examining the psychological and technological mechanisms fostering deception in digital spaces. A structured search strategy was employed using key search terms related to digital validation, deception, online fraud, and social media influence, particularly among adolescents. The search terms included "digital validation-seeking behaviors," "Dark Triad traits and online deception," "social media influence on online fraud," "romance scamming and cyber manipulation," "algorithmic reinforcement and deceptive behaviors," and "psychological drivers of online fraud." The literature review was conducted using multiple high-quality academic databases, including PsycINFO, PubMed, MDPI, Google Scholar, and ProQuest. A rigorous selection process was applied to ensure the inclusion of high-quality and relevant studies. The inclusion criteria were mostly peer-reviewed articles published between 2022 and 2024, research focusing on digital validation-seeking behaviors and online deception among adolescents. Also included were studies examining social media influence, Dark Triad traits, and cyber manipulation among adolescents, empirical research on algorithm-driven deception and psychological conditioning in digital spaces, including studies conducted in Western and technologically advanced societies where online fraud is prevalent among adolescents. The exclusion criteria were articles older than five years unless foundational to theoretical understanding, non-peer-reviewed sources (except for government-sponsored research reports, such as the Federal Trade Commission (FTC)), studies not published in English, articles focusing on offline fraud rather than digital deception, and theoretical perspectives without empirical evidence. A total of 90 peer-reviewed papers published between 2022 and 2024 were screened. The selection process involved title and abstract screening, followed by a full-text review of the most relevant articles. Studies lacking empirical rigor or methodological transparency were excluded to ensure a high standard of research integration.

Theoretical Foundations

Social Learning Theory

Social learning theory suggests that behavior is learned through observation, imitation, and reinforcement (Amsari et al., 2024). Romance scammers learn deceptive tactics by observing scammer communities, victim vulnerabilities, and social media algorithms that optimize manipulation strategies (Choi et al., 2024). This theory explains how validation-seeking individuals transition into manipulative online behaviors, reinforced by digital interactions that

reward deception (Burrell, 2024). The reinforcement cycle is particularly pronounced among adolescents, who are still developing their moral reasoning and self-regulation abilities, and studies demonstrate that exposure to deceptive online behavior normalizes such conduct, making adolescents more susceptible to engaging in manipulative tactics (Ko & Kim, 2024; Sanchez et al., 2024).

Social Comparison Theory

Social comparison theory explains how individuals evaluate themselves against others to establish self-esteem and social standing (Arigo et al., 2024). Romance scammers exploit this by curating idealized personas, mirroring high-status social media influencers, and employing validation-seeking techniques and over time, scammers refine these tactics, leading to an increased psychological detachment and escalation into cyber fraud (Desjarlais, 2024). Adolescents experience heightened sensitivity to social validation, which increases their likelihood of engaging in deceptive practices as a means of maintaining online status (Trekels et al., 2024a). This continuous cycle of seeking validation and engaging in deceptive behavior fosters an environment in which manipulation becomes an accepted norm.

Cognitive Dissonance Theory and Development of Deceptive Behavior

Cognitive Dissonance Theory explains how individuals resolve conflicting beliefs and actions, similar to how scammers may initially experience psychological discomfort when engaging in deception, but later rationalize their behavior through monetary gain, social reinforcement, or perceived victim culpability (Fedorov, 2024; Vaidis et al., 2024). Research suggests that 80% of individuals who engage in minor online deception initially experience cognitive dissonance, but repeated validation from fraudulent behaviors diminishes ethical concerns over time, facilitating more extensive manipulation tactics (Jabutay et al., 2024; Muneer et al., 2024).

Routine Activity Theory and Online Exploitation

Routine Activity Theory suggests that crime occurs when a motivated offender, a suitable target, and the absence of guardianship converge (Cohen & Felson, 1979). This theory applies to romance scams, where scammers exploit victims through digital platforms with minimal regulation or oversight (F. Wang & Dickinson, 2024). Adolescents engaged in persistent social media validation-seeking behaviors are at a 72% higher risk of engaging in deceptive online interactions, particularly when they perceive online anonymity as reducing accountability (Alsoubai et al., 2024; Trekels et al., 2024b).

Hyperpersonal Communication Theory and Online Deception

The Hyperpersonal Communication Theory explains how digital interactions can become more persuasive and intimate than face-to-face conversations (Walther & Whitty, 2020). Scammers leverage text-based communication, asynchronous messaging, and curated online personas to manipulate victims more effectively (Alsoubai et al., 2024; Chan & Chui, 2024). Adolescents who engage in excessive validation-seeking behaviors on social media develop heightened online self-presentation tendencies, making them 50% more susceptible to deception through hyperpersonal interactions (López et al., 2024; Trekels et al., 2024).

Dark Triad Traits and Manipulative Cyber Behaviors

The Dark Triad comprising narcissism, machiavellianism, and psychopathy, is strongly associated with online deception and romance scamming (Ahmad et al., 2024, Ohu & Jones, 2025a). Studies demonstrate that narcissists seek validation through online deception, machiavellians manipulate social interactions for strategic gain, and psychopaths exhibit a lack of empathy, enabling guilt-free fraud (Burnell et al., 2024). Adolescents exhibiting Dark Triad traits are particularly prone to

using social media platforms as a testing ground for manipulative behavior, often escalating from minor deceptions to more elaborate scams over time.

Social Media Influence, Digital Validation-Seeking and Progression of Deceptive Online Behaviors

Digital validation-seeking behaviors are deeply rooted in adolescent social media use, where individuals seek peer approval and algorithmic affirmation (Pérez-Torres, 2024b). Research indicates that adolescents with low parental monitoring are 68% more likely to engage in deceptive online behaviors (Mustafa et al., 2024), and algorithmic exposure reinforces manipulative engagement tactics, fostering a reliance on digital validation that can escalate into romance scamming (Burnell et al., 2024). Hani et al. (2024) stated that early engagement in catfishing and exaggerated digital self-presentation serves as a psychological rehearsal for later-stage online fraud. Research also highlights that scammers test and refine deceptive scripts in digital spaces, optimizing their fraudulent techniques through social media reinforcement and scammer echo chambers (Hjetland et al., 2024; Pellegrino & Stasi, 2024; Zhou, 2024). This progression illustrates how digital environments provide scammers with a training ground for deception, transitioning from validation-seeking behaviors to full-scale romance scamming (Ahmed, 2024). Adolescents engaged in these behaviors may initially view them as harmless, yet repeated exposure and success in manipulation reinforce and escalate their deceptive tendencies (Whitten et al., 2024).

This review of current literature highlights the importance of examining formative digital behaviors, particularly in adolescence, where social validation is highly sought after in online interactions. Adolescents increasingly depend on social media feedback mechanisms to establish their self-worth, reinforcing validation-seeking behaviors that may predispose them to deceptive online interactions (Schreurs et al., 2024). Studies suggest that these behaviors create a gateway to digital deception, as individuals who engage in minor dishonest interactions may escalate into more deceptive actions, including romance scamming, when reinforced by social validation and financial incentives (Herrera & Hastings, 2024). Understanding the psychological characteristics of both victims and scammers is crucial for identifying at-risk personality profiles on social media platforms (Purwaningrum et al., 2024). To address the research question of how digital validation-seeking behaviors contribute to deceptive online interactions, future studies must continue exploring the interplay of psychological, technological, and social factors. By examining the cognitive and emotional responses of individuals who seek digital validation, researchers can gain insight into how self-esteem fluctuations and social influence shape online deception.

Research Methodology

This study employs a narrative literature review approach to synthesize existing research on the relationship between digital validation-seeking behaviors and romance scamming. A thematic analysis was conducted to identify patterns and trends across peer-reviewed literature, rather than relying on primary qualitative data collection. This approach is particularly well-suited for forensic cyberpsychology, as it facilitates an in-depth exploration of behavioral patterns, cognitive processes, and social influences that underpin online deception (Bahmanova & Lace, 2024; Kirwan et al., 2024). A developmental trajectory was applied to examine how early validation-seeking tendencies, shaped by social media reinforcement, parental influence, and peer comparisons, contribute to behavioral patterns that may escalate into financial fraud during adulthood (Mustafa et al., 2024). Longitudinal research suggests that early-stage deceptive behaviors, such as catfishing and persona exaggeration, may serve as precursors to more sophisticated cyber fraud schemes later in life (Ahmad et al., 2024).

By integrating theoretical models of adolescent personality development and cyber deception, the study contributes to the fields of digital forensic psychology and cybercrime

prevention. Following Braun & Clarke's (2019, 2024) six-phase framework, this study systematically identifies, categorizes, and interprets themes (Naeem et al., 2023) from recent peer-reviewed literature related to validation-seeking behaviors, cyber deception, and romance scams (Amsari et al., 2024). This study is guided by the research question: "How do digital validation-seeking behaviors contribute to the progression of deceptive online interactions in adolescents leading to romance scamming?" This research question shaped the selection of sources, coding of themes, and interpretation of findings, ensuring a structured and rigorous analysis of digital deception patterns and the risk factors associated with the progression from validation-seeking to romance scams.

Data Collection and Sources

A comprehensive narrative literature search was conducted using PsycINFO, Scopus, and Google Scholar. The search terms employed were "Validation-seeking behaviors," "Romance scams," "Cyber deception," and "Dark Triad traits." The inclusion and exclusion criteria for study selection were clearly defined. Inclusion criteria focused on peer-reviewed articles published between 2018 and 2024, studies examining psychological and social factors related to cyber deception in adolescents, and empirical research on algorithm-driven deception and validation-seeking behaviors in adolescents. Exclusion criteria included studies published before 2018 except for foundational theories, non-peer-reviewed sources (except government-sponsored research reports), and articles not published in English. This data collection approach ensures that the study considers the developmental trajectory of romance scammers, accounting for their activities as adult perpetrators as well as the origins and evolution of their behaviors during adolescence.

Thematic Analysis Process

The six-phase thematic analysis model proposed by Braun and Clarke (2019, 2024) was employed to examine validation-seeking behaviors from adolescence to adulthood. A developmental trajectory approach was adopted to track the evolution of deceptive behaviors over time. The analysis was conducted in systematic stages, which included familiarization with the data, where the research team immersed themselves in selected studies, identifying recurring behavioral patterns related to validation-seeking and deception, initial coding, where key behavioral elements, such as validation-seeking, deception tactics, social reinforcement, and algorithmic influence, were coded. Particular focus was given to age-related variations in deception strategies, theme identification, where coded data were categorized into broader thematic groups, including psychosocial vulnerabilities and manipulative digital behaviors that contribute to romance scam behaviors.

Also included were theme reviews, where identified themes were reviewed to ensure alignment with adolescent developmental pathways and the evolution of romance scamming tactics, with special attention given to the development of Dark Triad traits of narcissism, machiavellianism, psychopathy over time. Furthermore, theme refinement and naming, where themes were refined to capture distinct deception trajectories, ensuring that each category addressed both adolescent and adult deception pathways, including findings synthesis and reporting, where the final themes were synthesized to illustrate how digital validation-seeking behaviors escalate into cyber fraud, offering a forensic cyberpsychology perspective on deception progression. As shown on Table 1, a thematic framework was developed to provide a forensic timeline of deception progression, mapping the transition from adolescent validation-seeking behaviors to full-scale romance scams.

Table 1. Expanded Thematic Coding Framework for Romance Scamming Analysis

Category	Code	Definition	Adolescent Dimension	Sample Sources
Digital Validation-Seeking	DVS	The dependence on online approval, attention, and engagement for self-worth.	Emerges in adolescence through social media reinforcement, peer approval, and parental neglect.	Ge S., (2024), Pedrouzo et al., (2024), (Kornienko & Rudnova, 2024), Hillman et al. (2023)
Manipulative Digital Behaviors	MDB	The use of deception and persuasive tactics to maintain validation and control.	Often starts as minor online persona exaggeration (e.g., catfishing) before escalating into financial fraud.	(Kornienko & Rudnova, 2024) Guan Y. (2024). Syahril S. A (2024), Ahmed, (2024)
Algorithmic Reinforcement	AR	How social media platforms amplify deceptive behaviors through engagement-based algorithms.	Adolescents with high social comparison tendencies are especially vulnerable to algorithmic-driven behavior shaping.	Allen et al., (2024), Pinho et al., (2024), Latuheru & Cangara, (2024), Pellegrino & Stasi (2024)
Psychosocial Vulnerabilities	PSV	Personal and situational factors (e.g., financial stress, social isolation) that contribute to scammer behavior.	Family conflict, socioeconomic instability, and low parental oversight contribute to early risk behaviors.	Martínez-Casanova et al., (2024), Maya et al., (2024), Mustafa et al., (2024), Pérez-Torres, (2024)
Romance Scam Progression	RSP	The psychological transition from seeking validation to engaging in full-scale romance scams.	Digital deception becomes habitual, leading to more advanced financial fraud tactics.	Soares & Lazarus (2024), Wang & Dickinson (2024), Herrera & Hastings (2024), Wang & Dickinson (2024)

Figures 3 and 4 visually illustrate the progression of online deception, with Figure 3 depicting the interaction of key behavioural traits, psychological factors, and algorithmic influences and Figure 4 presenting a flowchart of the stages of deception development, from early-stage digital validation-seeking to adult cyber fraud (Cole, 2024).
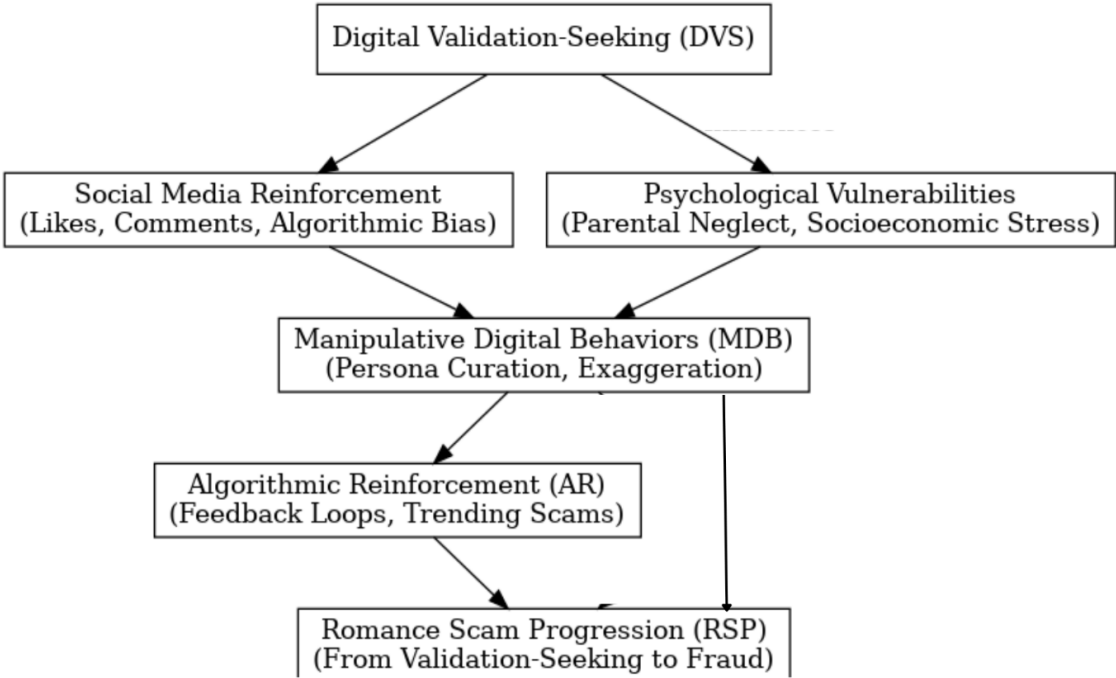
Figure 3. Thematic Map of Digital Validation-Seeking and Romance Scamming
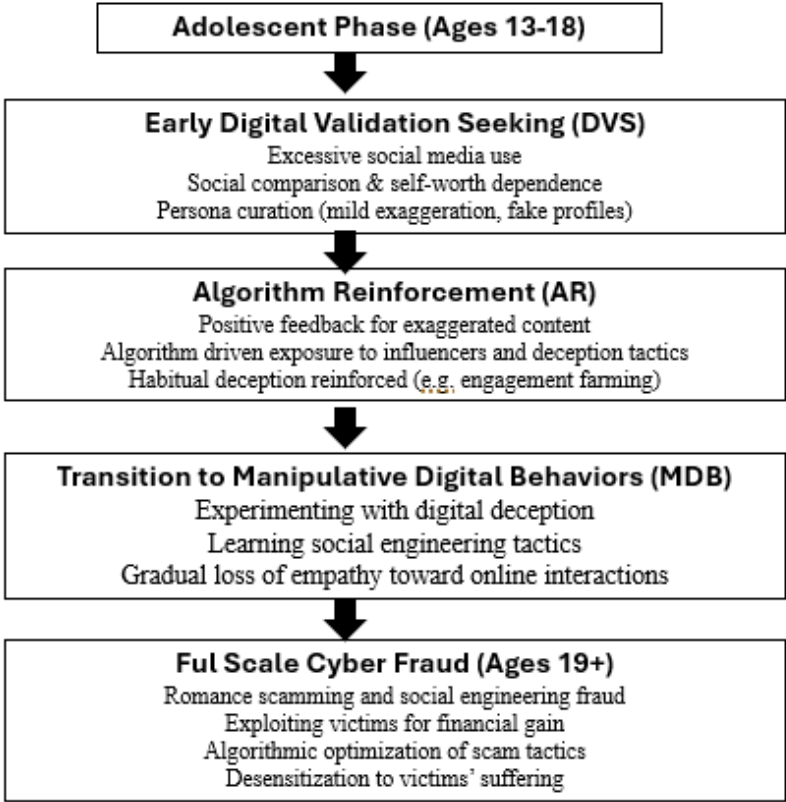
Figure 4. Flowchart: The developmental pathway from Adolescents to Romance Scammers

Research Findings

Analysis of the selected studies identified three primary themes illustrating how digital validation-seeking behaviors develop into romance scamming tactics.

Digital Validation-Seeking as a Psychological Precursor

Adolescents' self-esteem becomes increasingly tied to external social media approval, reinforcing behaviors such as exaggeration, deception, and selective self-presentation (Pérez-Torres, 2024). Individuals with lower self-esteem are 67% more likely to engage in manipulative online behaviors to maintain digital validation (Mustafa et al., 2024). Social media reinforces this self-worth dependency, as individuals with low self-esteem are 67% more likely to engage in deceptive self-presentation to gain digital approval (Mustafa et al., 2024). Validation-seeking is linked to deception, as users who prioritize external validation are more prone to online persona exaggeration, which may escalate into manipulative behavior (Burnell et al., 2024). Social comparison loops increase susceptibility to fraud involvement, as adolescents frequently exposed to social comparison mechanisms develop narcissistic or machiavellian traits, making them more vulnerable to fraudulent behaviors (Ahmad et al., 2024). Scammers often begin as digital validation-seekers, and over time, individuals who initially sought online approval learn to manipulate social interactions for personal or financial gain. Algorithmic reinforcement is leveraged to normalize deception as a strategy for online engagement (Ahmed, 2024). Adolescent-specific findings suggest that adolescents who engage in early-stage digital deception such as fake profiles and catfishing, are significantly more likely to escalate into manipulative cyber behaviors as adults (Ahmad et al., 2024). Peer-driven validation dependence increases susceptibility to machiavellian traits, as adolescents refine manipulation tactics through social media reinforcement loops (Hani et al., 2024). Algorithmic exposure reinforces deceptive behavior by rewarding engagement-based validation, which encourages habitual exaggeration and

selective self-presentation (Burnell et al., 2024). These patterns suggest that the same psychological mechanisms that drive adolescent validation-seeking also lay the foundation for later-stage cyber deception and romance scamming.

Transition from Validation-Seeking to Romance Scamming

Repeated exposure to social validation-seeking mechanisms reinforces deception as a viable strategy, as individuals habitually manipulate online identities to achieve social approval (Ohu & Jones, 2025b). Over time, these individuals may escalate from persona exaggeration, such as catfishing, to romance scam tactics for financial gain (Siddiqi et al., 2024). This escalation is driven by the refinement of deception techniques through social media interactions, recognition of financial incentives in manipulative behaviors, and decreased empathy due to repeated deception, a hallmark of Dark Triad personality traits. As adolescents become accustomed to using deception for validation, they may extend these behaviors into financial and social engineering strategies (Siddiqi et al., 2022). The progression from self-validation to financial fraud is often incremental, driven by repeated success in online persona manipulation, positive reinforcement from peers and engagement algorithms, and diminished moral constraints due to detachment from real-world consequences (Coluccia et al., 2020; Diresta & Goldstein, 2024). Key findings suggest that social engineering skills improve over time, as scammers learn victim responses through trial and error, refining emotional manipulation tactics (Desjarlais, 2024). Financial incentives also accelerate deception escalation, with 80% of romance scammers beginning as small-scale digital manipulators, often through catfishing or engagement farming before moving into large-scale fraud (Zhou, 2024). Machiavellian traits develop in response to success, as scammers become increasingly detached from victim consequences (Hjetland et al., 2024). Adolescent-specific findings indicate that 40% of cyber fraudsters reported that their first experiences with deception occurred in adolescence, often through social media experiments in validation-seeking (Pellegrino & Stasi, 2024). Additionally, adolescents raised in environments with high familial conflict or socioeconomic instability are twice as likely to engage in manipulative online behaviors as a means of social control (Mustafa et al., 2024). Online anonymity also fosters deception rehearsal, where adolescents test the boundaries of manipulation before transitioning to full-scale scams (Zhou, 2024). The same validation-seeking mechanisms used for social approval become tools for emotional fraud, as scammers learn to mirror victims' vulnerabilities, creating false emotional connections to exploit financial trust (Hani et al., 2024).

Algorithmic and Socioeconomic Reinforcement of Cyber Fraud

Algorithmic reinforcement mechanisms optimize deception-based engagement by prioritizing emotionally charged and high-visibility content (Pellegrino & Stasi, 2024). 80% of romance scammers leverage AI-driven deepfake tools to enhance deception credibility (Shin & Jitkajornwanich, 2024). Socioeconomic stressors also drive individuals to turn digital deception into a source of income. Algorithmic bias plays a significant role in rewarding deception, as social media platforms prioritize content that elicits strong emotional responses (Pellegrino & Stasi, 2024). This optimization creates an environment where romance scams can thrive. Scammers use AI tools to enhance their deception, increasing the credibility of scams and leading to higher victim engagement (Shin & Jitkajornwanich, 2024). Financial desperation is a key motivator for many romance scammers, with 53% citing economic hardship as their primary reason for engaging in fraud (Ahmed, 2024). The combination of algorithmic incentives and financial motivations creates an ecosystem where manipulative behavior is rewarded with engagement and visibility, as a result, cyber fraud becomes an appealing pathway for individuals predisposed to deception (Babaei & Vassileva, 2024; Van der Linde, 2024).
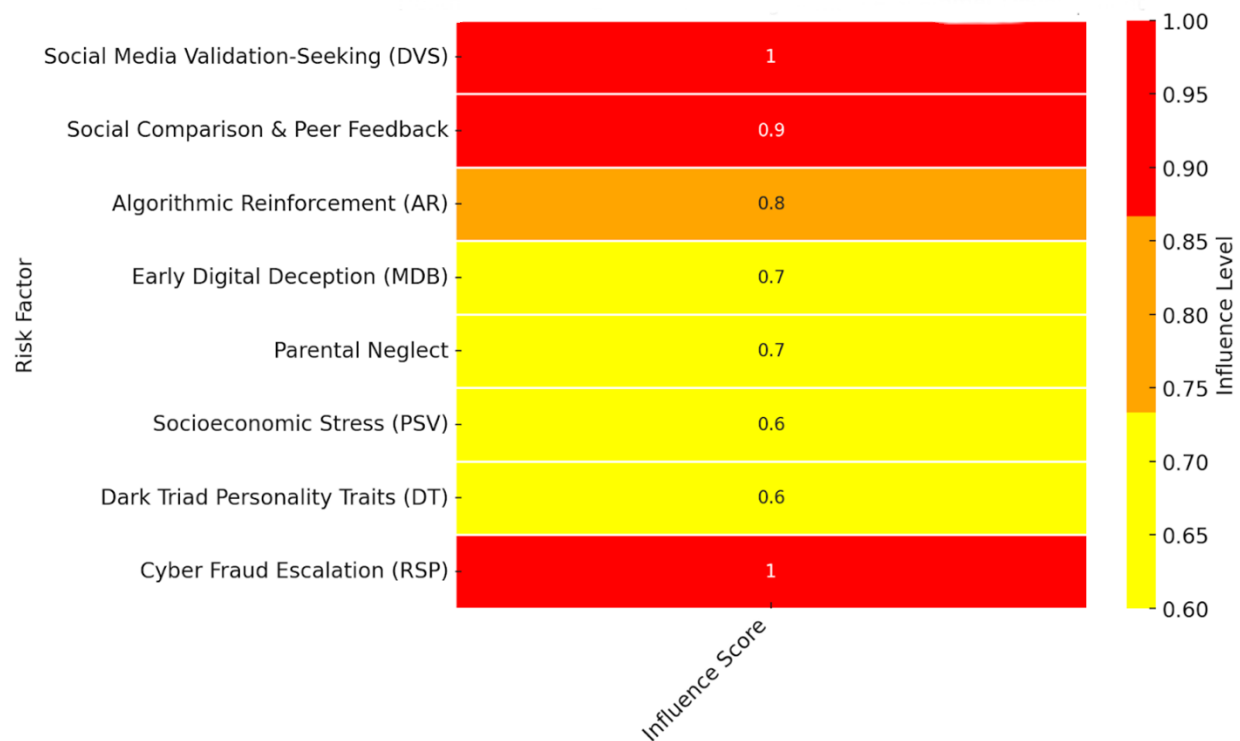
Figure 5. Heatmap of risk factors influencing romance scammer development

Figure 5 illustrates the study's key findings, and the relative influence of various risk factors contributing to romance scammer development, with a scale ranging from 0 to 1. The results indicate that digital validation-seeking (DVS) exhibits the highest influence (1.0) as a predictor of romance scam behaviors, followed closely by social comparison and peer feedback (0.9). Algorithmic reinforcement (AR) plays a crucial role (0.8), significantly shaping deception tactics. Early digital deception (MDB) and parental neglect each hold a moderate-to-high impact (0.7), allowing manipulative behaviors to develop. Socioeconomic stress (PSV) and Dark Triad personality traits (DT) demonstrate a moderate influence (0.6). Cyber fraud escalation (RSP) holds a very high influence, scoring 1.0. Overall, the findings suggest that digital validation-seeking (DVS) is the strongest predictor of romance scam behaviors, with algorithmic reinforcement (AR) playing a major role in shaping deception tactics. Parental neglect and socioeconomic stress act as secondary influences, enabling adolescents to explore manipulative behaviors without oversight.

Discussion

The findings of this study highlight how digital validation-seeking behaviors serve as psychological precursors to romance scamming, with scammers transitioning from online self-presentation strategies to full-scale financial deception (Siddiqi et al., 2022). This discussion will explore the forensic cyberpsychology implications, the connection between social media validation and cybercrime, and the role of digital platforms in reinforcing manipulative behaviors. These findings demonstrate that adolescents who engage in high levels of social media validation-seeking are at risk of developing manipulative behaviors. When left unchecked, these tendencies can escalate into fraudulent activities, including romance scams and financial deception. This raises concerns about the long-term impact of adolescent social media use, particularly how early digital validation-seeking behaviors shape cognitive and ethical frameworks for online interactions (Burnell et al., 2024). The transition from seeking digital validation to engaging in romance scams is not abrupt but rather a gradual psychological and behavioral shift (Coluccia et al., 2020). Individuals who begin by exaggerating online personas for attention and approval may,

over time, realize that deception yields not only social validation but also financial rewards (Ohu & Jones, 2025b; Mustafa et al., 2024). The normalization of deception within digital spaces, reinforced by repeated validation and engagement-based algorithms, increases susceptibility to fraud engagement (Ahmed, 2024).

Psychological Mechanisms in Digital Validation-Seeking and Romance Scamming

Self-Esteem Contingency on External Approval

Digital validation-seeking behaviors serve as a key psychological mechanism that fosters deception, as individuals with a strong dependency on external validation are more likely to engage in manipulative online behaviors to maintain social status and digital engagement (Mustafa et al., 2024). This reliance on external approval creates psychological vulnerabilities, where dishonest tactics become increasingly normalized, particularly among those driven by financial incentives (Burnell et al., 2024). Adolescents, in particular, who experience fluctuating self-esteem due to prolonged social media exposure, may experiment with deception as a means of gaining peer approval, ultimately reinforcing manipulative behaviors as habitual patterns (Carwati et al., 2024; Mustafa et al., 2024b). This behavioral reinforcement, combined with exposure to fraudulent success stories on social media, conditions adolescents to view deception as a viable means of personal and financial gain (Hjetland et al., 2024).

The Role of Narcissistic and Machiavellian Personality Traits

Digital validation-seeking behaviors contribute to the development of manipulative online behaviors, particularly among individuals exhibiting Dark Triad traits (Ohu & Jones, 2025a). Narcissistic tendencies intensify reliance on external validation, leading to inflated online personas and deceptive social tactics (Ahmad et al., 2024). Machiavellianism, in turn, enables individuals to rationalize manipulation, facilitating the transition from validation-seeking behaviors to romance scamming without moral hesitation (Hani et al., 2024). Youth displaying emerging Dark Triad tendencies may initially engage in strategic deception for social control, which can eventually escalate into financial exploitation as manipulative behaviors become more reinforced and habitual (Ohu & Jones, 2025b). The findings highlight that early deception-based validation often conditions individuals to disconnect from ethical considerations, reinforcing fraudulent tactics over time (Pellegrino & Stasi, 2024).

Cyberpsychology of Social Engineering

Digital validation-seeking behaviors play a crucial role in the development of cyberpsychological manipulation, particularly in the use of social engineering tactics by romance scammers. Scammers often employ emotional mirroring techniques to exploit victims' vulnerabilities, carefully mimicking romantic partners' language and emotional cues to establish trust and control (Ahmed, 2024). Over time, repeated engagement in deception leads to desensitization toward victim suffering, reinforcing long-term scamming behaviors as a habitual practice (Pellegrino & Stasi, 2024). Early experiences with online deception among adolescents, such as fake relationships, influencer impersonation, or catfishing, may serve as behavioral rehearsals for more advanced social engineering scams in adulthood (Asher et al., 2024; Kornienko & Rudnova, 2024; Park et al., 2024). The findings suggest that digital deception progresses in complexity as scammers refine tactics through continuous exposure to online fraud techniques (Desjarlais, 2024).

How Social Media and Algorithmic Amplification Reinforce Manipulative Behaviors

Social media platforms play a dual role in the development of validation-seeking behaviors and cyber deception, as they strongly influence digital validation-seeking tendencies through algorithmic amplification and engagement-driven feedback loops. These platforms reinforce

manipulative behaviors, making them instrumental in shaping both validation-seeking tendencies and the evolution of romance scamming tactics. Social media platforms are designed to prioritize high-engagement content, often elevating emotionally charged and deceptive material, inadvertently creating an environment where manipulation is rewarded (Shin & Jitkajornwanich, 2024). Romance scammers learn to exploit these systems, ensuring their fraudulent profiles and messages are widely distributed to potential victims (Zhou, 2024). Adolescents who are exposed to algorithmically promoted deceptive content, such as viral pranks or staged social experiments, may internalize manipulative behaviors early, normalizing deception as an effective social and financial strategy. Furthermore, advancements in AI-driven deception, including deepfake videos and AI-generated messaging, provide scammers with more sophisticated tools for fraud, increasing deception complexity (Hjetland et al., 2024).

How Feedback Loops Reinforce Deception

Engagement-driven algorithms inadvertently train scammers in psychological manipulation, as platforms highlight and reward deceptive tactics that generate strong user responses (Hjetland et al., 2024). This creates a self-reinforcing cycle, where scammers refine emotional manipulation and social engineering techniques based on data-driven insights into victim engagement patterns. AI-assisted fraud, including deepfake romance scammers, is becoming increasingly sophisticated, further blurring the distinction between genuine and deceptive interactions (Ahmed, 2024). Additionally, youth who routinely engage in deception-based validation-seeking, such as fake personas in online gaming or social media role-playing, may internalize manipulative tactics as viable social strategies, ultimately increasing their susceptibility to transitioning into cyber fraud (Collier & Morton, 2024; Park et al., 2024; M. Wang, 2024).

The Impact of Socioeconomic Factors

Scammers from economically disadvantaged regions are significantly more likely to rationalize cyber fraud as a financial survival strategy, particularly when legal employment opportunities are scarce (Mustafa et al., 2024). This aligns with previous research on cybercriminal pathways, which suggests that financially motivated deception often begins with small-scale social media manipulation before escalating into full-scale fraud (Burrell et al., 2024). Adolescents from low-income backgrounds with limited access to economic mobility may perceive online deception as a low-risk, high-reward opportunity, reinforcing the transition from validation-seeking behaviors to structured cyber fraud (Kassem & Carter, 2024). These insights underscore the urgent need for interdisciplinary collaboration between cybersecurity professionals, forensic cyberpsychologists, and social media platforms to detect and disrupt scam networks at an early stage. Addressing algorithmic bias, promoting digital literacy, and creating AI-driven scam detection tools could help mitigate the growing intersection between social media validation-seeking and online deception.

Conclusion

This study examined the psychological precursors to romance scamming, focusing on the psychological, algorithmic, and socioeconomic mechanisms driving this transition. The findings indicate that validation-seeking behaviors progressively condition individuals to engage in online deception, as social media users who rely on external approval for self-esteem are more likely to exaggerate or fabricate online personas (Pérez-Torres, 2024). Over time, engagement-driven reinforcement normalizes deceptive behavior, making manipulation a viable strategy for both social and financial gain. The study found that Dark Triad traits facilitate scammer psychology, with narcissism fueling self-enhancement through deception, Machiavellianism enabling strategic manipulation, and psychopathy reducing empathy for victims (Ahmad et al., 2024). Social media platforms actively reinforce deceptive behaviors, as algorithmic biases reward engagement-driven manipulation tactics, making romance scams both financially and socially incentivized behaviors

(Shin & Jitkajornwanich, 2024). Early exposure to deceptive social tactics in adolescence increases long-term fraud risks, as individuals who engage in minor deception for validation are more likely to develop habitual manipulative behaviors that escalate into financial fraud (Collier & Morton, 2024; Kassem & Carter, 2024). Social reinforcement loops, peer approval, and algorithmic amplification play a significant role in shaping deception progression (Burnell et al., 2024). Socioeconomic factors also contribute to scammer motivation, with financial hardship increasing the likelihood of engaging in cyber fraud, particularly in regions where online deception is perceived as an alternative income source (Hani et al., 2024). To mitigate the rise of romance scams and digital deception, this study suggests three key intervention strategies including, Algorithmic Monitoring and AI-Based Fraud Detection, Digital Literacy and Psychological Resilience Training and Strengthening Law Enforcement and Policy Interventions.

Algorithmic Monitoring and AI-Based Fraud Detection

Social media platforms must enhance algorithmic transparency to mitigate the reinforcement of deceptive engagement strategies. AI-based fraud detection should be implemented to identify behavioral patterns linked to romance scams. Real-time monitoring of suspicious activities such as sudden profile changes, mass messaging, unusual engagement patterns, can help flag potential scams (Pellegrino & Stasi, 2024). Additionally, platform adjustments to de-prioritize deceptive engagement strategies could reduce scam exposure and disrupt the reinforcement cycle.

Digital Literacy and Psychological Resilience Training

Public awareness campaigns should emphasize how validation-seeking vulnerabilities make individuals susceptible to social engineering tactics used by scammers (Desjarlais, 2024). Schools and workplaces should integrate cyber hygiene training programs, ensuring that individuals can recognize deceptive engagement patterns and develop resilience against manipulative online interactions (Zhou, 2024). Further, educational initiatives should focus not only on victim awareness but also on preventing at-risk youth from transitioning into cyber fraud through online deception normalization.

Strengthening Law Enforcement and Policy Interventions

Cross-border collaboration between cybersecurity agencies, financial institutions, and social media companies should be strengthened to improve scam detection and prosecution efforts (Ahmed, 2024). Governments should introduce stricter identity verification protocols for online dating platforms, reducing the prevalence of fake profiles used in romance scams (Mustafa et al., 2024). Furthermore, early intervention strategies should focus on behavioral profiling, allowing for risk detection of individuals transitioning from digital deception to cyber fraud.
Future Research Directions

Longitudinal Studies on Scammer Behavioral Trajectories

Future research should conduct longitudinal studies to track individuals' transitions from validation-seeking behaviors to full-scale fraud, focusing on psychological, technological, and social reinforcements driving this evolution. Understanding early behavioral markers of digital deception may improve AI-driven fraud detection systems, enabling earlier intervention (Pellegrino & Stasi, 2024). Longitudinal studies should monitor adolescents engaging in high-validation digital behaviors, assessing how their online deception tactics evolve over time and whether early deceptive behaviors predict later financial fraud engagement. Neuroscientific studies should investigate cognitive reinforcement mechanisms, exploring whether repeated exposure to algorithmic engagement loops and deceptive social validation cycles rewires ethical decision-making processes, sustaining habitual manipulative behaviors. By integrating behavioral

tracking with neurocognitive analysis, future studies can provide a comprehensive understanding of how digital reinforcement mechanisms shape deception trajectories.

The Role of AI in Scam Evolution

As AI-driven scams become increasingly sophisticated, research should examine how deepfake technology, chatbot automation, and generative AI influence romance scam success rates and victim manipulation (Shin & Jitkajornwanich, 2024). AI-generated scam bots capable of real-time emotional responses could significantly increase online deception success rates, making it harder for victims to differentiate between human and machine-driven manipulation. Research should analyze how AI personalizes fraud techniques, particularly in adaptive scamming strategies where fraudsters use AI to tailor deception to individual victim profiles. AI-driven predictive analytics may enable scammers to optimize engagement strategies, dynamically adjusting communication styles and emotional triggers based on victim responses. Therefore, investigating fraud-as-a-service models, where scammers use AI-assisted phishing and automated deception, can shed light on how fraudulent tactics are continuously adapted, refined, and deployed at scale. Forensic analysis of AI-driven scam networks can reveal patterns in deception training and operational structures, providing insights into the future industrialization of cyber fraud.

The Ethical Responsibility of Social Media Platforms

Future studies should assess the ethical responsibility of social media companies in preventing scammer exploitation of engagement algorithms (Ahmed, 2024). Research should explore whether algorithmic transparency policies can mitigate scam networks' ability to manipulate digital validation-seeking behaviors. By examining how engagement-driven algorithms incentivize deceptive practices, future research can inform policy recommendations that promote algorithmic accountability and reduce the reinforcement of manipulative online behaviors. Research should also evaluate the effectiveness of algorithmic de-amplification of deceptive content in reducing the prevalence and reach of romance scams. Future studies should investigate real-time scam detection tools, focusing on automated fraud flagging mechanisms integrated into social platforms. Regulatory interventions, such as mandatory scam-prevention protocols for digital platforms, should be explored to ensure that platforms proactively prevent fraud exposure and reinforcement cycles. By integrating AI-driven fraud detection with policy-based oversight, future research can contribute to a multi-layered approach to mitigating digital deception at scale.

Final Thoughts

By integrating adolescents into this research, we establish a clear developmental pathway from early-stage digital validation-seeking to full-scale romance scamming. The findings demonstrate that social reinforcement mechanisms within digital spaces play a crucial role in conditioning deceptive behaviors, particularly in adolescents who rely heavily on external approval for self-esteem (Charmaraman et al., 2024; Mustafa et al., 2024). As social media algorithms reward high engagement content, including deceptive interactions, individuals who experiment with persona exaggeration, social engineering tactics, and manipulative validation-seeking behaviors may gradually transition into financially motivated online fraud (Soares & Lazarus, 2024; F. Wang & Dickinson, 2024). Romance scams are not simply financial crimes, but rather psychological manipulations deeply rooted in digital validation-seeking behaviors. Scammers exploit cognitive vulnerabilities by creating false emotional connections, mirroring victims' desires and insecurities to establish trust and dependency (Coluccia et al., 2020). The role of social media algorithms in amplifying manipulative engagement tactics further exacerbates this issue, making deception not only accessible but also socially reinforced. AI-driven deception technologies, such as automated scam bots, deepfake-generated personas, and real-time emotional response engines, are transforming online fraud into an increasingly complex and scalable operation (Shin & Jitkajornwanich, 2024). By understanding how social media reinforcement loops, cognitive

vulnerabilities, and economic incentives drive online deception, forensic cyberpsychology can inform more effective intervention strategies that target both potential victims and emerging scammers.

To combat the psychological and systemic mechanisms that sustain romance scamming, a multifaceted approach is necessary. This includes AI-driven fraud detection and algorithmic adjustments, comprehensive digital literacy and psychological resilience training, policy reforms and algorithmic transparency measures, and forensic cyberpsychology and behavioral profiling for scam prevention. AI-based fraud detection systems must be enhanced to analyze behavioral patterns and flag suspicious interactions in real time. Social media platforms should implement algorithmic adjustments to reduce the promotion of deceptive engagement tactics, minimizing exposure to manipulative personas and fraudulent networks. Educational programs must go beyond basic scam awareness and focus on developing cognitive resilience against deceptive online engagement strategies. Schools, universities, and workplaces should integrate cyber hygiene and deception awareness programs that equip individuals with the skills to recognize and resist social engineering manipulation. Governments and regulatory bodies should enforce stricter policies on algorithmic accountability, requiring social media companies to disrupt engagement-based reinforcement loops that normalize deception. Implementing identity verification protocols for online dating and financial transaction platforms can help limit the proliferation of fraudulent profiles and scam operations. Cyberpsychology research should focus on behavioral profiling techniques to identify at-risk individuals before they transition into organized fraud. By studying the cognitive reinforcement mechanisms driving digital deception progression, forensic experts can develop early intervention strategies that disrupt scammer evolution at its psychological root. As romance scams continue to evolve alongside emerging technologies, it is imperative to adopt preventative frameworks that mitigate the intersection of digital validation-seeking, psychological manipulation, and financial exploitation. Through a combination of AI-driven safeguards, psychological education, and ethical governance, stakeholders can work toward disrupting these harmful cycles and creating safer digital environments for individuals of all ages.

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Exploring Green Human Resources, Corporate Social Responsibility, and Internal Organization Sustainability Strategy

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Abstract: The genesis of Corporate Social Responsibility (CSR), often interchangeably referred to as corporate citizenship or sustainability, can be traced back to the foundational 1987 Brundtland Report, a pivotal document commissioned by the United Nations. This report catalyzed a paradigm shift, positioning CSR as a multidimensional construct that necessitates the harmonious integration of an organization's economic, legal, ethical, and philanthropic imperatives. Over time, CSR has evolved into a framework that aligns corporate strategies, operations, and behaviors with the overarching goals of fostering sustainability, encapsulated in the triadic principles of planet, people, and profit. This paper delves into the intricate dynamics that compel organizations to embrace environmentally conscious or "green" organizational cultures. Research suggests that corporate entities often undergo transformative shifts in their philosophies to adapt to the demands of an ever-evolving global environment, heavily influenced by the imperatives of corporate sustainability initiatives. These green frameworks reconceptualize the strategic role of human resources, positioning it as a pivotal driver in cultivating organizational cultures that prioritize innovation and differentiate technical competencies. By embedding sustainability at the core of their operational ethos, organizations are not only enhancing their adaptability but are also fostering an ecosystem conducive to technological advancement and innovative excellence.

Keywords: Corporate Social Responsibility (CSR), organizational sustainability, green organizational cultures, green human resources

JEL Codes: M14, Q56, Q01, L21, O13

Introduction

The unprecedented surge in global industrial activities has precipitated a profound escalation in the consumption of natural energy resources and exacerbated global warming over recent decades (Shuja et al., 2017). Concurrently, technological advancements have introduced a transformative dimension to modern human lifestyles, redefining societal paradigms (Shuja et al., 2017). The proliferation of computing and information technology services has significantly increased energy demands, compelling organizations to reevaluate their environmental responsibilities alongside organizational climate and cultural frameworks (Shuja et al., 2017). The onset of the COVID-19 pandemic in early 2020 profoundly disrupted global economies, with corporations and their extensive workforce struggling to navigate heightened consumer demands. As economic imperatives dominate corporate agendas, many organizations have been compelled to furlough employees while prioritizing digital transformation and innovation as cost-saving imperatives (Cicea et al., 2022).

Amid the pandemic's pervasive disruptions, businesses have been pressed to swiftly adapt to emerging technologies, data management innovations, and significant organizational changes. Research underscores the importance of leveraging advancements to broaden organizational perspectives, identify existing knowledge gaps, draw insights from historical analyses, and align strategic contributions with broader cultural imperatives (Cicea et al., 2022; Susanto, Nadiroh, & Sigit, 2021). As technological developments accelerate, organizations face mounting pressure to address global environmental concerns related to

corporate operations (Gollnow, 2014; Shephard, 2016). Shrivastava (1994) aptly noted, "Organizations are a primary instrument by which humans impact their natural environment" (p. 705). The legitimacy of environmental consciousness has emerged as a critical determinant of safety, security, and performance within organizational cultures (Susanto et al., 2021). Environmental stewardship is increasingly regarded as an asset, driving organizations to innovate while fostering conceptual agility and relational synergies (Cicea et al., 2022; Prince & Forr, 2021). However, the energy-intensive nature of information technology operations poses significant environmental challenges. Butler (2011) reported that greenhouse gas (GHG) emissions attributable to IT operations rose from 2% in 2007 to 6% in 2020, reflecting the rapid expansion of data centers and server infrastructures. These facilities require substantial energy for both operation and cooling, with the demand escalating as networks and storage systems proliferate (Shephard, 2016; Gollnow, 2014). Maintaining these infrastructures around the clock not only consumes enormous energy resources but also imposes escalating financial costs (Gollnow, 2014; Shephard, 2016).

Despite these pressing environmental challenges, scholarly discourse on the role of human resource management in fostering systemic sustainability-driven transformations in technical organizations remains limited. Emerging research emphasizes the need to prioritize human capital in cultivating sustainable organizational cultures, yet practical models for embedding sustainability strategies within HR functions are scarce (Jackson & Seo, 2010). As green organizational cultures gain traction, corporations must embrace resource-conscious innovations to remain viable and competitive in evolving marketplaces (Susanto et al., 2021).

The concept of green human resources (Green HR) emerges as a strategic response to the environmental challenges posed by industrial growth, technological advancements, and the growing demand for sustainability. Green HR refers to the integration of environmentally conscious practices within the human resource management (HRM) framework, emphasizing the alignment of organizational goals with sustainability imperatives. Green HR encompasses a set of practices and policies designed to foster environmental stewardship, reduce the ecological footprint of corporate operations, and build a sustainability-driven organizational culture. This approach positions human capital as a pivotal driver for embedding green values into the organizational fabric.

Consequently, the development of organizational strategies centered on sustainability has become a vital focus for technical enterprises. The field of strategic management, from which much of this understanding originates, traditionally embraced normative and rational models, viewing strategy as a calculated path toward predefined objectives (Mintzberg, 1988). Historically tied to military concepts, strategy has been synonymous with deliberate, goal-oriented actions aimed at achieving desired outcomes, such as fostering sustainable cultural transformations within organizations (Ahmad, 2015). This perspective underscores the imperative for modern organizations to integrate sustainability into their strategic frameworks, ensuring alignment with environmental imperatives and long-term operational resilience.

The Focus of this Research

The relentless expansion of global industrial activity has produced profound dual effects on both work-life equilibrium and the broader human environment (Shuja et al., 2017). Foremost, the escalating global population has precipitated an accelerated depletion of natural energy resources, exerting immense pressure on planetary reserves (Shuja et al., 2017). Concurrently, industrial growth has significantly elevated carbon emissions, compelling organizations to prioritize clean energy efficiency. These challenges underscore the critical importance of cultivating organizational cultures that champion sustainability, particularly within green enterprises. As carbon emissions intensify, the attendant repercussions, including escalating disease rates, global

warming, and ozone layer depletion, necessitate a paradigm shift in organizational priorities (Shuja et al., 2017).

Organizational culture, a cornerstone of institutional sustainability, is shaped by an interplay of internal and external determinants. Internally, key factors include employees, leadership, competence and support, operational focus, and the allocation of resources and technology (Cicea et al., 2022). Managing these dimensions requires tools to articulate a cohesive organizational vision. Employees, representing the human capital of organizations, bring distinct personality traits and capabilities that contribute to institutional dynamics (Cicea et al., 2022; Susanto et al., 2021). While organizations cannot exercise absolute control over individual actions, they can implement guidelines and metrics to establish robust internal controls (Cicea et al., 2022). Leadership, intrinsically linked to these internal dynamics, plays a pivotal role; ineffective leaders can erode organizational culture, while exemplary leadership fosters alignment and adherence to behavioral expectations (Susanto et al., 2021).

Competence and support further underpin organizational success, necessitating comprehensive training programs that equip employees to meet defined benchmarks (Cicea et al., 2022). Similarly, the operational focus, or activity field, involves aligning individual contributions with the organizational mission to ensure collective efficacy. Moreover, the strategic deployment of resources and technology has emerged as a critical determinant in the post-COVID-19 landscape, where resource-sharing inefficiencies can precipitate workforce discontent and impede cultural evolution.

Externally, political, economic, industrial, social, and technological factors profoundly shape organizational culture. Economic considerations have gained heightened salience in the pandemic era, where cost-cutting measures tied to production levels, consumer spending, and shifting needs disrupt daily operations (Cicea et al., 2022). These economic fluctuations often entail regressions as societal shifts compel organizations to recalibrate their sustainability strategies (Daryono, Wahyudi, & Suharnomo, 2022).

Industrial factors introduce another layer of complexity, as competitive pressures influence decision-making and impact long-term viability through supply-demand dynamics. Social factors, meanwhile, can pose existential challenges, with shifting societal norms and viral archetypes jeopardizing organizational reputation, consumer trust, and operational continuity (Daryono et al., 2022). Organizations attuned to social responsibility must integrate such elements into their cultural frameworks to maintain relevance and ensure success (Cicea et al., 2022).

Finally, technological factors represent a transformative force, such as continuous innovations, system upgrades, and cutting-edge advancements drive organizational adaptation and foster sustainable growth. The convergence of these internal and external influences necessitates an agile, responsive organizational culture, capable of navigating complexity while remaining steadfast in its commitment to sustainability and resilience. Through the deliberate cultivation of such cultural frameworks, organizations can effectively harmonize economic imperatives with environmental stewardship, ensuring their endurance in a dynamic global landscape.

The Aim of this Research

The role of human resources as a catalyst for fostering sustainable organizational culture is both significant and indispensable. Despite the growing recognition of sustainability as a strategic imperative, a discernible gap exists within the academic literature regarding the mechanisms and methodologies for embedding sustainability into the cultural fabric of technical organizations. This article seeks to bridge this scholarly void by elucidating the critical interplay between sustainability and organizational culture, with particular emphasis on the transformative potential of leadership.

At the core of this discourse is the concept of transformational leadership, which emerges as a pivotal driver of cultural evolution within organizations. Transformational leadership transcends conventional managerial paradigms, operating as a multidimensional construct that influences not only organizational culture but also key facets of employee engagement and innovation. Through its foundational pillars, intellectual stimulation, individualized consideration, idealized influence, and inspirational motivation, transformational leadership cultivates an environment conducive to progressive cultural shifts (Cicea et al., 2022).

Intellectual stimulation, for instance, challenges traditional ways of thinking, encouraging employees to adopt innovative approaches that align with sustainability objectives. Individualized consideration underscores the importance of recognizing and addressing the unique needs and aspirations of employees, thereby fostering a sense of personal investment in organizational goals. Idealized influence positions leaders as role models who exemplify the principles of sustainability, inspiring trust and commitment among their teams. Finally, inspirational motivation galvanizes the workforce, instilling a shared vision that unites organizational members in pursuit of a sustainable future (Cicea et al., 2022). By highlighting these interconnections, this article not only addresses a critical research gap but also underscores the transformative capacity of human resources and leadership in reshaping organizational culture to prioritize sustainability. This exploration lays a foundation for future studies aimed at operationalizing sustainability initiatives and measuring their long-term impact within technical organizations.

Novelty, Importance, and Originality of the Inquiry

The inquiry into the intersection of sustainability, organizational culture, and human resource management (HRM) is both novel and essential in addressing the complex challenges posed by industrialization, technological expansion, and global environmental concerns. The originality of this research lies in its focus on embedding sustainability within HRM practices, a domain that has traditionally been underexplored in scholarly discourse. While sustainability has been extensively studied in environmental sciences and strategic management, its integration into the operational and cultural frameworks of organizations, particularly through human capital strategies, remains a relatively untapped area. This research seeks to bridge this gap by investigating the mechanisms through which human resources can drive systemic, sustainability-focused transformations in organizations, emphasizing the critical role of leadership and cultural alignment.

The importance of this inquiry is underscored by the escalating environmental pressures confronting organizations today. As technological advancements and industrial activities amplify energy consumption and greenhouse gas emissions, the role of organizational culture in fostering sustainable practices becomes increasingly vital. By examining how human resources can cultivate sustainability-driven cultural transformations, this study not only addresses a critical research void but also offers actionable insights for organizations striving to balance economic imperatives with environmental stewardship. Furthermore, this research contributes to the broader discourse on organizational resilience and adaptability in the face of global challenges, such as those highlighted by the COVID-19 pandemic. Through its innovative approach and strategic implications, this study lays the groundwork for a more comprehensive understanding of how organizations can harmonize operational objectives with sustainability goals, ensuring long-term viability and societal relevance.

Method

The research utilized a rapid literature review methodology to systematically analyze and synthesize relevant literature. This approach, designed to efficiently gather and evaluate a broad range of academic and non-academic sources, ensured the inclusion of high-quality evidence

within a condensed timeframe. The review process began with the identification of key search terms derived from the study's conceptual framework. These terms included "Green Human Resources," "Green IT," "Organizational Change," "Knowledge Management," "Employee Engagement," and "Organizational Sustainability Strategy." Boolean operators such as "AND," "OR," and "NOT" were employed to refine search queries and optimize retrieval accuracy.

The literature search encompassed a diverse array of databases and platforms to capture both peer-reviewed articles and grey literature from the last decade. The databases, along with their hosting platforms, included ABI Inform Complete (ProQuest), ResearchGate, Academia.edu, Business Source Premier (EBSCO), Google Scholar, ACM Digital Library, the European Reference Index for the Humanities and Social Sciences (ERIH), Baidu Scholar, and the Directory of Open Access Journals (DOAJ). Each database was selected based on its relevance to the topics under investigation and its capacity to provide interdisciplinary insights.

To ensure a rigorous inclusion strategy, the review incorporated predefined criteria for selecting articles. Peer-reviewed journal articles, conference proceedings, white papers, and organizational reports published within the last ten years were prioritized. Only sources available in English or translated into English were included to maintain consistency. Articles were assessed based on their relevance to the themes of sustainability, organizational culture, and green initiatives, with a particular focus on their empirical contributions and methodological robustness.

The rapid review method offered several advantages. Its streamlined approach facilitated the timely identification of high-quality sources while minimizing duplication of effort. The inclusion of grey literature broadened the scope of the review, capturing valuable perspectives that might not have been available in traditional academic databases. This comprehensive strategy ensured that the analysis incorporated a diverse range of viewpoints and reflected the latest advancements in the field. By employing this method, the study achieved a nuanced understanding of how sustainability strategies intersect with organizational culture and leadership practices, paving the way for actionable recommendations.

Green Human Resources and Sustainability

Green human resources and the integration of advanced technologies represent both an emergent global sector and a vital support system for businesses across industries (Shuja et al., 2017). The high-energy demands of the IT sector are a significant contributor to global energy consumption, accounting for an estimated 2.4% to 3% of worldwide electricity usage, with an alarming 20% annual growth rate (Shuja et al., 2017). Furthermore, the IT industry contributes approximately 2% to 2.5% of global carbon emissions, equivalent to 0.86 metric gigatons of carbon dioxide (Shuja et al., 2017). These statistics underscore the critical need for energy-efficient computing systems, necessitating a redefinition of existing practices, algorithms, and technologies to achieve energy sustainability and reduce environmental impact (Shuja et al., 2017). As a pivotal area of research, green computing has far-reaching implications for human resources and organizational climates, influencing strategic planning and operational efficiency (Shuja et al., 2017).

Human resources (HR) can play a transformative role in leading organizational shifts in priorities and focus, particularly in addressing the pressing need for sustainability and energy efficiency as outlined in the quoted text. The integration of green human resources and advanced technologies provides an opportunity for HR to not only support but also drive the alignment of organizational goals with sustainable practices. This leadership potential is evident in three critical areas: redefining cultural frameworks, addressing employee needs, and fostering adaptability. Human resources departments are uniquely positioned to influence and recalibrate organizational culture to prioritize sustainability. As the IT sector continues to place significant demands on global energy resources, accounting for 2.4% to 3% of

electricity consumption and contributing up to 2.5% of global carbon emissions, HR can guide organizations in embracing energy-efficient practices and technologies (Shuja et al., 2017). By integrating green computing principles into strategic planning, HR can champion initiatives that reduce carbon footprints, promote energy sustainability, and align operational practices with the broader mission and vision of the organization. This redefinition of culture necessitates a deliberate shift from static, outdated practices to innovative approaches that incorporate sustainability into daily operations and long-term goals.

An essential aspect of HR's leadership role is addressing the emotional and psychological well-being of employees while fostering a sense of purpose and inclusion. As the quoted text highlights, many organizations fail to adequately support their employees due to bureaucratic inertia and competing priorities, which can result in dissatisfaction and disengagement (Al-khrabsheh et al., 2022). HR can counteract these trends by implementing comprehensive support systems, such as training programs for green initiatives and clear communication of sustainability goals. By ensuring that employees feel valued and connected to the organization's mission, HR can cultivate a cohesive and motivated workforce that actively contributes to sustainability efforts.

Dynamic environments and unexpected challenges, such as external pressures or crises, require organizations to be flexible and resilient. Human resources can lead the way in creating adaptable frameworks that enable businesses to respond effectively to change. By emphasizing inclusivity and reducing inherent biases in organizational culture, HR can foster an environment that encourages innovation and transformative thinking (Al-khrabsheh et al., 2022). This adaptability is particularly crucial when sustainability objectives do not align with existing structures. HR can implement crisis management and recovery plans that incorporate sustainability metrics, ensuring that the organization remains agile and forward-thinking even in turbulent times (Daryono et al., 2022).

The role of HR extends beyond operational support to encompass strategic leadership. HR can develop and monitor metrics that measure the effectiveness of sustainability initiatives, using these insights to refine processes and align them with organizational goals. Furthermore, HR can act as a feedback conduit, facilitating communication between employees and leadership to identify gaps in sustainability efforts and address them proactively (Al-khrabsheh et al., 2022). By doing so, HR ensures that the organization remains committed to its sustainability objectives while continuously evolving to meet new challenges.

Change Management

Organizational change is a multifaceted and often fraught process, as highlighted by research underscoring the challenges of setting objectives, engaging stakeholders, and effectively implementing change initiatives (Burnes & Jackson, 2011; Kotter & Schlesinger, 2008; Roberts, 2017). Despite its necessity, change frequently falters, with approximately 70% of initiatives failing due to an inability to address resistance and embed cultural shifts (Burnes & Jackson, 2011). Central to overcoming these obstacles is the role of leadership and human resources (HR), which possess significant influence over employee acceptance and tolerance of change (Swearingen, 2019).

Leadership acts as a linchpin in the success of organizational change. Employees tend to mirror the attitudes of their managers, making the receptivity of top management to change pivotal for broader acceptance (Hwang et al., 2015). Effective communication is another cornerstone of successful change management. Clear, concise messaging facilitates understanding and reduces anxiety, while fostering dialogue between change managers and employees creates a sense of inclusion and mitigates resistance (Heckmann et al., 2016; Swearingen, 2019). Communication serves as both an inspirational and reinforcement tool, ensuring that employees remain engaged throughout the transformation process (Kuster et al.,

2015). Power dynamics within an organization further complicate change efforts. The distribution of authority and influence, both formal and informal, plays a critical role in shaping employee attitudes and behaviors (Kanter, 2008). Formal power, often associated with visible leadership roles, enables decision-making authority, while informal power stems from networks of influence that can galvanize support for change (Kanter, 2008). Managers must identify key influencers within the organization to secure buy-in and navigate the complex interplay of hierarchical and relational power structures (Kuster et al., 2015).

Kurt Lewin's Change Management Model

Kurt Lewin's Change Management Model offers a three-step framework—unfreeze, change, and refreeze—that is particularly relevant to the implementation of sustainability initiatives (Dzage, 2023). HR departments act as facilitators of cultural transformation by "unfreezing" existing norms and introducing new sustainability-focused behaviors and values. This involves preparing employees for change through training, communication, and the promotion of green initiatives. The "change" phase involves embedding resource efficiency and sustainable practices into operational processes. Finally, the "refreeze" phase ensures that these practices are institutionalized, solidifying a culture of environmental responsibility that persists over time.

Social Exchange Theory

Social Exchange Theory, which emphasizes reciprocal relationships between individuals and organizations, explains the critical connection between HR strategies, employee engagement, and corporate social responsibility (CSR) (Albasu & Nyameh, 2017). Employees are more likely to engage with sustainability initiatives when they perceive that their organization values their well-being and aligns with their personal values. HR's role in fostering a culture of reciprocity, through meaningful CSR activities, recognition programs, and opportunities for participation, enhances employee commitment and motivation. This reciprocal relationship fosters a workforce that is both engaged and invested in the organization's sustainability goals (Albasu & Nyameh, 2017).

The Competing Values Framework

The Competing Values Framework (CVF) provides insight into how organizations balance competing priorities such as flexibility, control, internal focus, and external focus (Prutina, 2015). In the context of sustainability, HR serves as a mediator between these dimensions. For example, HR may implement flexible training programs to foster innovation while maintaining structured systems for tracking energy use and carbon reduction. By navigating these competing values, HR aligns organizational culture with sustainability goals, creating a balanced and adaptable environment conducive to long-term success.

Resource-Based View (RBV)

The Resource-Based View emphasizes the strategic importance of leveraging internal resources, such as human capital and knowledge systems, for competitive advantage (Gallego-Álvarez et al., 2011). Green human resources strategies exemplify the RBV by positioning employees as key assets in achieving sustainability objectives. By providing green training and fostering a culture of innovation, HR maximizes the potential of human capital to drive resource efficiency, energy conservation, and environmental stewardship. This strategic alignment of resources with organizational goals ensures that sustainability becomes a core component of the organization's competitive advantage.

Kanter (2008) proposed six conditions essential for empowering employees during change: opportunities for advancement, access to information, access to support, access to resources, formal power, and informal power. These structural elements enable leaders to

mobilize resources effectively, aligning organizational goals with the cultural shifts required for successful change initiatives.

Employee engagement is indispensable for successful organizational change. Resistance often stems from a misalignment between change initiatives and the values, attitudes, and principles of employees (Burnes & Jackson, 2011). Creating a shared vision and involving employees in shaping the change process can positively influence attitudes and foster readiness for transformation (Rafferty et al., 2013; Roberts, 2017). As Roberts (2017) emphasized, the success of organizational change hinges on the willingness of individuals to adjust their behaviors, making participation and personal transformation fundamental.

Human resources play a vital role in aligning strategies and policies to encourage sustainability and cultural adaptation. By fostering collective problem-solving, knowledge sharing, and innovative practices, HR can facilitate the emergence of environmentally responsible values and behaviors (Ahmad, 2015). The creation of new roles and responsibilities centered on sustainability further underscores HR's strategic importance in guiding organizations toward transformative change.

Effective strategy development and implementation require seamless communication and collaboration across all organizational levels (Quinn, 1978). HR departments are uniquely positioned to act as intermediaries, facilitating knowledge sharing and strategic alignment. This includes designing job roles that integrate sustainability into core functions such as IT, operations, and employee management (Ahmad, 2015). Collaborative, team-oriented approaches that prioritize proactive and innovative problem-solving have proven most effective in achieving sustainability goals (Harris & Crane, 2002).

The Pivotal Role of Human Resources in Cultivating Organizational Sustainability

The human resource (HR) department holds a critical position in shaping an organization's sustainability culture, directly aligning with its strategic objectives (Ahmad, 2015). Through intentional practices embedded at every stage of talent management, HR can effectively harmonize employees' actions with the organization's corporate social responsibility (CSR) strategy, particularly in advancing sustainability (Ahmad, 2015). The concept of green human resources encapsulates the use of every employee interaction point to advocate for sustainable practices, elevate awareness, and foster employee commitment to environmental stewardship (Ahmad, 2015). These approaches span recruitment messaging, hiring methodologies, training programs, employee development initiatives, performance evaluation systems, and reward structures, all designed to integrate sustainability and eco-consciousness into the organizational ethos (Ahmad, 2015). For instance, HR can promote sustainability by adopting paperless processes in areas such as recruitment, benefits administration, training, and internal communications, thereby reducing paper consumption and mitigating its environmental impact (Ahmad, 2015). This demonstrates how operational decisions, rooted in green HR principles, translate sustainability goals into actionable practices.

Strategic Decision-Making Across Organizational Systems

The successful implementation of sustainability-oriented HR strategies necessitates deliberate and informed decision-making at key junctures within the organizational framework (Ahmad, 2015). In modern technical organizations, decision-making operates at both macro and micro levels, each contributing uniquely to organizational performance and overarching strategy (Gollnow, 2014; Mintzberg, 1988). Green HR initiatives form a crucial subset of broader CSR programs and are characterized by two primary components: environmentally responsible HR practices and the preservation of intellectual capital (Ahmad, 2015). Recruitment practices that underscore sustainability through targeted messaging and initiatives are pivotal in reinforcing the organization's commitment to eco-friendly values and operations (Ahmad, 2015).

Leveraging Knowledge Management for Green Training and Development

The role of HR extends beyond traditional functions to include the stewardship of knowledge systems that enhance organizational processes (Milton & Lambe, 2016). While information technology systems generate vast reservoirs of knowledge and expertise, this resource is frequently underutilized in advancing sustainability objectives (Milton & Lambe, 2016). Developing robust knowledge management systems is imperative for enabling the dissemination of information and fostering green training and development initiatives. Green training and development encompass structured activities and programs aimed at equipping employees at all levels with the requisite knowledge, skills, and understanding to engage with sustainability initiatives within their roles and responsibilities (Ahmad, 2015). This process emphasizes the cultivation, sharing, and transfer of knowledge related to waste reduction, energy conservation, recycling, and other environmental improvements. Such initiatives empower employees to contribute meaningfully to organizational efforts aimed at sustainability, while simultaneously fostering a culture of environmental innovation and responsibility (Ahmad, 2015).

Creating a Foundation for Green Training and Knowledge Systems

For green training to thrive within an organization, it requires a dual commitment from HR and senior leadership to support the establishment and maintenance of comprehensive knowledge management systems (Ahmad, 2015). These systems serve as the backbone for integrating sustainability into business processes, enabling employees to identify opportunities for environmental improvement and actively participate in achieving them. By bridging the gap between organizational strategy and employee engagement, HR can act as a transformative force, driving sustainability through a well-structured, knowledge-driven approach. Human resources serve as a cornerstone in embedding sustainability within an organization's cultural and operational frameworks. Through the adoption of green HR practices, strategic decision-making, and knowledge management systems, HR can facilitate the development of an eco-conscious workforce aligned with CSR objectives. This multidimensional approach not only advances environmental goals but also strengthens the organization's overall strategy, ensuring long-term success in an increasingly sustainability-driven global landscape.

Knowledge Management Systems

Knowledge management (KM) is defined as "the process by which an organization creates, captures, acquires, and uses knowledge to support and improve the performance of the organization" (Kinney, 1998, p. 2). This concept extends beyond simple data handling to include the strategic exploitation and development of knowledge assets to advance organizational objectives (Metaxiotis et al., 2005). Effective KM involves a deliberate integration of practices and systems designed to optimize the utilization of knowledge for achieving organizational goals (Dalkir, 2017; Milton & Lambe, 2016). Organizations that thrive in competitive and dynamic environments are often those that excel in creating new knowledge, disseminating it effectively, and embedding it into innovative technologies and products (Metaxiotis et al., 2005).

Tacit and Explicit Knowledge: Foundations of Knowledge Management

The dual nature of knowledge, tacit and explicit, is central to KM processes. Tacit knowledge, characterized by its personalized and experiential nature, often remains undocumented and is transmitted informally through interpersonal interactions (Dalkir, 2017; Milton & Lambe, 2016). In contrast, explicit knowledge is codified, formalized, and easily shared through structured systems such as manuals and databases. Effective KM strategies require mechanisms to facilitate the conversion of tacit knowledge into explicit forms and vice versa, ensuring accessibility and utility across the organization (Dalkir, 2017). Nonaka and Takeuchi (1995) describe knowledge construction as a five-step process, beginning with the sharing of tacit knowledge among

individuals and culminating in the dissemination of validated, actionable knowledge throughout the organization. This cyclical process highlights the dynamic interplay between individual expertise and collective organizational understanding.

Knowledge Systems and Organizational Integration

The conceptual framework of knowledge systems provides a comprehensive lens for examining how knowledge is created, shared, and utilized within organizations. This approach emphasizes the institutionalization of KM processes that shape behavior and decision-making in complex environments (Holzner & Marx, 1979; Dalkir, 2017). These processes, encompassing the creation, organization, distribution, and application of knowledge, are critical for fostering a sustainable culture within organizations (Milton & Lambe, 2016). The effective implementation of knowledge systems requires robust strategies that align with organizational objectives while promoting sustainable practices. Human resources (HR) departments play a pivotal role in designing and executing these strategies, functioning as both enablers and regulators of KM practices (Ahmad, 2015).

Codification and Personalization: Dual Strategies for Knowledge Management

Hansen et al. (1999) identify two primary strategies for KM: codification and personalization. Codification emphasizes the structured documentation and storage of explicit knowledge, enabling its reuse across various organizational contexts. This "people-to-document" approach relies heavily on technological infrastructure to categorize, store, and retrieve knowledge efficiently (Milton & Lambe, 2016). For instance, organizations employing a codification strategy invest in databases, procedural libraries, and policy repositories to standardize decision-making and improve operational consistency.

In contrast, personalization focuses on the interpersonal transfer of tacit knowledge through dialogue, collaboration, and shared experiences. This "person-to-person" approach is exemplified by the cultivation of communities of practice, networks that facilitate the exchange of expertise, best practices, and innovative ideas among individuals with shared interests (Wenger, 2002; Brown & Duguid, 2001). Communities of practice extend beyond organizational boundaries, fostering interdisciplinary collaboration and innovation. HR departments are instrumental in establishing and nurturing these communities, particularly in areas such as sustainability, where collective problem-solving can drive significant environmental advancements (Ahmad, 2015).

The connection between successful organizational sustainability strategies and knowledge management lies in the ability to systematically capture, retain, and utilize organizational memory, history, and performance data to inform and guide sustainability practices. Organizational knowledge management (KM) serves as the foundation for creating a repository of institutional knowledge, ensuring that past experiences and best practices contribute to the development and refinement of sustainability initiatives. This interplay ensures that sustainability efforts are not only strategic but also grounded in the organization's historical context and collective wisdom.

Organizational memory is the accumulation of knowledge, processes, and experiences retained within an organization over time. It encompasses both tacit knowledge, such as employee expertise and informal networks, and explicit knowledge, including documented policies, procedures, and performance metrics. In the context of sustainability, organizational memory allows companies to build on past successes and learn from prior challenges. For instance, data from previous sustainability initiatives, such as energy efficiency programs or waste reduction efforts, can be stored in knowledge management systems to guide future strategies. By leveraging organizational memory, businesses can avoid redundancies, refine practices, and improve overall efficiency.

Organizational history provides a narrative of past actions, decisions, and outcomes, offering valuable insights into the evolution of sustainability strategies. This historical perspective enables organizations to identify patterns, track progress, and understand the factors that contributed to previous successes or failures. For example, documenting the timeline and outcomes of a long-term sustainability initiative can help identify critical inflection points and decision-making processes that shaped its trajectory. Such historical insights not only inform current practices but also enhance organizational credibility by demonstrating a sustained commitment to environmental and social responsibility.

Tracking the elements of organizational success in sustainability is integral to continuous improvement. Knowledge management systems facilitate the systematic documentation and analysis of key performance indicators (KPIs), milestones, and innovations that drive sustainability outcomes. These systems can store data on energy consumption, carbon emissions, waste management, and employee engagement, providing a comprehensive view of organizational performance. Additionally, by integrating advanced analytics, organizations can identify correlations between specific practices and successful outcomes, enabling more informed decision-making.

For instance, a company might use KM tools to analyze the impact of transitioning to renewable energy sources across multiple facilities. By tracking metrics such as cost savings, emissions reductions, and employee perceptions, the organization can determine the efficacy of its approach and replicate it in other areas. This process not only enhances operational efficiency but also reinforces a culture of accountability and evidence-based decision-making.

Successful integration of KM and sustainability strategies requires a proactive approach to capturing and utilizing knowledge. This includes creating mechanisms for knowledge transfer, such as mentoring programs, sustainability-focused training, and collaborative platforms like communities of practice. These initiatives ensure that knowledge is not siloed but shared across the organization, fostering innovation and collaboration. Furthermore, embedding sustainability metrics into organizational dashboards and reports ensures that sustainability becomes an integral part of organizational decision-making, rather than an ancillary goal.

The Transformative Potential of Knowledge Management in Advancing Sustainability

The integration of knowledge management (KM) into sustainability initiatives underscores its profound transformative capacity to reshape organizational practices. Green training and development programs exemplify this potential by equipping employees with the expertise to engage in waste reduction, energy conservation, and recycling while empowering them to implement environmentally responsible behaviors (Ahmad, 2015). Human Resources (HR) departments, bolstered by the support of senior leadership, play a pivotal role in establishing and maintaining knowledge systems that facilitate the dissemination and application of sustainability-oriented information. For instance, information technology (IT) communities of practice may collaborate on innovative methods, such as adopting renewable energy solutions for server facilities, utilizing storage tiering, and implementing data virtualization techniques. These approaches optimize resource allocation and usage, thereby minimizing environmental impact while aligning KM practices with broader corporate social responsibility (CSR) imperatives.

Human Resources as Catalysts for Knowledge Management and Cultural Transformation

The role of HR in KM extends beyond mere facilitation, encompassing the strategic alignment of organizational policies with sustainability goals. By embedding KM into critical talent management processes, HR ensures that employees are equipped with the requisite tools,

resources, and expertise to advance the organization's overarching strategic objectives (Ahmad, 2015). This integration fosters a culture of continuous learning, incentivizes active participation in KM initiatives, and embeds sustainability considerations into recruitment practices, training programs, and performance evaluation frameworks. For example, HR can design recruitment strategies that prioritize candidates with a demonstrated commitment to sustainability or introduce evaluation criteria that measure employee contributions to green initiatives. These efforts collectively strengthen the organization's capacity to achieve its sustainability objectives.

Effective KM strategies, supported by visionary HR leadership, are indispensable for cultivating organizational sustainability and fostering enduring cultural change. Organizations that leverage both codification and personalization strategies can establish dynamic KM systems that drive innovation, reinforce CSR objectives, and promote long-term organizational success. Codification strategies focus on capturing and storing explicit knowledge in accessible formats, enabling knowledge reuse and institutional memory retention. Conversely, personalization strategies emphasize the interpersonal transfer of tacit knowledge through collaboration, dialogue, and mentorship. The synergy between these approaches enables organizations to build robust KM frameworks that align closely with sustainability goals.

HR's strategic involvement in KM processes highlights its critical role in cultivating green cultures within organizations. By championing KM initiatives and fostering employee engagement, HR serves as the linchpin connecting sustainability objectives with actionable organizational practices. This alignment empowers organizations to not only meet but exceed their CSR commitments, ensuring resilience in an increasingly sustainability-driven global marketplace.

The integration of robust KM practices into sustainability strategies has the potential to transform organizational operations and cultures. By empowering employees through green training and fostering collaborative innovation, HR departments play an instrumental role in embedding sustainability into the organizational fabric. Through strategic KM processes, organizations can harness knowledge as a catalyst for environmental stewardship and operational excellence, positioning themselves as leaders in the global sustainability movement. Ultimately, the confluence of KM and sustainability represents a powerful avenue for achieving both environmental responsibility and sustained organizational success.

Burrell and Alemu Framework for Integrating Sustainability into Organizational Culture (2025)

Component	Description	Role of Human Resources (HR)	Outcomes/Impact
The Role of Organizational Management in Sustainability	Management allocates resources, sets goals, and devises strategies for embedding sustainability into organizational priorities. Aligns sustainability with the organization's mission and values to create a cohesive vision.	Collaborates with HR to bridge strategic planning and actionable initiatives.	Realistic and impactful sustainability objectives integrated into organizational priorities.
Policy and Strategy as Drivers of Cultural Transformation	Policies and strategies convert organizational aspirations into actionable plans. Sustainability is embedded in recruitment, training, and performance metrics.	Designs and implements policies aligned with environmental stewardship.	Fosters accountability, innovation, and alignment between employee behavior and organizational sustainability goals.

Optimizing Organizational Structure for Sustainability	Hierarchies and structural dynamics influence sustainability initiatives. Adjustments improve operational efficiency and support sustainability goals.	Recommend structural changes such as creating sustainability-focused roles or streamlining communication pathways.	Enhance adaptability, collaboration, and alignment with sustainability priorities.
Transforming Organizational Systems for Cohesion	Formal and informal mechanisms synchronize actions, policies, and behaviors to support sustainability. Systems ensure sustainability efforts are measurable and actionable.	Refine systems by implementing tracking mechanisms for energy usage and waste reduction.	Improves organizational efficiency and reinforces commitment to sustainability.
Shaping Organizational Culture Toward Sustainability	Organizational culture fosters employee engagement with sustainability through shared values and norms.	Initiates green training programs and recognition systems for eco-friendly behaviors to embed sustainability into the organizational ethos.	Creates a culture prioritizing environmental stewardship and long-term sustainability goals.
Human Resources as Architects of Sustainability	HR aligns knowledge management and employee engagement with sustainability objectives, equipping employees with tools to contribute effectively.	Implement green training and develop knowledge systems to support sustainability.	Embeds sustainability as a central pillar of operations and enhances employee capacity to contribute to environmental goals.
The Power of Employee Engagement in CSR and Sustainability	Employee engagement aligns organizational values with personal priorities, fostering motivation and loyalty. CSR activities enhance employee participation in sustainability initiatives.	Engages employees by understanding their priorities and offering meaningful participation opportunities in sustainability projects.	Increases organizational loyalty, innovation, and commitment to CSR and sustainability initiatives.

The relationship between HR and organizational sustainability is both multifaceted and transformative. Through strategic collaboration with management, the development of comprehensive policies, the optimization of structures, and the cultivation of a culture centered on environmental responsibility, HR drives the integration of sustainability into the core of organizational operations. By fostering employee engagement and leveraging knowledge systems, HR ensures that sustainability initiatives are actionable, measurable, and enduring. This alignment between organizational values, priorities, and practices positions organizations to thrive in an increasingly sustainability-focused global landscape while contributing to a more sustainable future.

Conclusions

Green human resources approaches have become instrumental in transforming organizational operations to meet sustainability demands. These demands are reshaping organizational culture by emphasizing resource efficiencies, promoting the reuse of energy and materials, and adopting sustainable manufacturing practices. Additionally, green human resources facilitate the implementation of initiatives that extend beyond organizational boundaries, supporting sustainability efforts across industries through advanced monitoring and management systems

(Shuja et al., 2017). While renewable energy-based operations present challenges such as performance unpredictability and resource trade-offs, energy-efficient systems and practices mitigate these issues by reducing overall consumption and carbon footprints. Human resources must navigate the delicate balance between energy performance and resource utilization, fostering organizational cultures that embrace energy-efficient designs, improved applications, and comprehensive sustainability strategies. Beyond self-contained efforts, the goal of green human resources is to promote environmentally responsible practices, not only within the organization but also across broader industrial ecosystems (Shuja et al., 2017).

Corporate social responsibility (CSR) research has expanded significantly, providing a deeper understanding of how organizational culture influences employee engagement and well-being (Glavas, 2016). Despite this progress, many organizations still fail to recognize the critical connection between human resources, CSR initiatives, and employee experiences. Low levels of engagement often hinder the successful implementation of sustainability practices, underscoring the need for strategic human resource involvement to address these gaps (Glavas, 2016). High-performing organizations may have clearly defined sustainability strategies, yet their failure to engage employees in these efforts reveals a missed opportunity to integrate human resources into the cultural transformation process (Lawler & Mohrman, 2014). Effective human resource management requires adaptive approaches that acknowledge the diverse and complex needs of employees, rather than relying on standardized, one-size-fits-all solutions (Daryono et al., 2022).

Human resources play a pivotal role in fostering leadership development and aligning it with sustainability objectives. By emphasizing productivity without sacrificing efficacy, HR ensures that employees are equipped with the skills and knowledge necessary for transformational and transitional growth. Training programs and job development initiatives foster productive interactions across all organizational levels, strengthening the bonds between managers and employees and enhancing overall performance (Al-khrabsheh et al., 2022). Moreover, HR's focus on human capital extends to critical areas such as work-life balance, performance evaluations, and the identification of candidates for leadership roles. Through these practices, HR drives the development of leaders who can effectively champion sustainability within the organizational framework (Daryono et al., 2022).

Organizational culture represents a set of shared values and principles that guide employee behavior and decision-making. Human resources are essential in shaping this culture to align with sustainability goals, embedding environmental consciousness into the organizational identity (Al-khrabsheh et al., 2022). This alignment involves creating opportunities and establishing guidelines that foster a climate of innovation and commitment to sustainability. However, current systems for measuring organizational culture often fail to capture the nuanced challenges associated with cultural transformation, addressing issues superficially rather than systemically (Prince & Forr, 2021). Leaders seeking to influence cultural change must be attentive to the formal and informal communication within the organization, as language significantly shapes employee attitudes and behaviors (Prince & Forr, 2021). By strategically addressing these dynamics, HR can guide organizations toward a culture that prioritizes sustainability as a core value.

Human resources serve as a bridge between sustainability initiatives and organizational practices, ensuring that policies, systems, and cultures are aligned with long-term environmental goals. By leveraging green human resource strategies, HR enables organizations to optimize resources, adopt energy-efficient practices, and foster a culture of sustainability. Additionally, HR's role in leadership development and employee engagement ensures that sustainability initiatives are supported by a motivated and informed workforce. Through these efforts, HR not only advances organizational priorities but also establishes a framework for meaningful cultural transformation that extends beyond the organization to influence industry-wide sustainability practices. This

comprehensive approach positions human resources as a key driver of organizational excellence in the pursuit of a sustainable future.

Practical Contribution to Knowledge in the Field

This inquiry makes a significant practical contribution to the field by elucidating the integral role of human resources (HR) in driving organizational sustainability through comprehensive strategies that align cultural, operational, and leadership frameworks with environmental objectives. The findings demonstrate how HR can serve as the nexus for embedding sustainability into organizational practices by fostering a culture of environmental stewardship, optimizing resource utilization, and equipping employees with the skills to champion green initiatives. By integrating sustainability into core HR functions such as recruitment, training, and performance management, organizations can bridge the gap between corporate social responsibility (CSR) strategies and employee engagement, addressing a critical barrier to the effective implementation of sustainability practices.

Moreover, this inquiry highlights the transformative potential of HR in shaping leadership development programs that align with sustainability objectives, ensuring the cultivation of leaders who can navigate complex environmental challenges. Through targeted training programs, job development initiatives, and a focus on work-life balance, HR facilitates the creation of a motivated, informed workforce that actively supports organizational sustainability goals. The research further underscores the role of HR in establishing industry-wide benchmarks for sustainability, extending the influence of green practices beyond individual organizations to foster systemic change across industrial ecosystems. This multifaceted approach not only advances organizational priorities but also contributes to a broader understanding of how HR can serve as a key driver in addressing the pressing global challenges of environmental degradation and resource scarcity.

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Product Threat Intelligence and the Adjustments of Grounds for Security Concerns

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Abstract: Defense awareness is a matter of ongoing research, not only restricted to military personnel. It is essential for those involved in warfare to consider the unfolding of additional security inputs and safety concerns that technological advancements may impact, especially considering how they become available to civilian society. Society progressively surrounds itself with innovations, gaining new awareness of the impacts on both the natural and man-made environment, as well as understanding the trade-offs associated with the innovations. Health is a crucial driver of scientific motivation and an inviolable condition of power. According to the World Health Organization (WHO, 2024), *t is important to know why people die to improve how people live*. Therefore, data enabling and *measuring how many people die each year helps to access the effectiveness of our health systems and direct resources to where they are needed most*. This aligns with the concept of Product Etiology. This article examines the trajectories that have led society to spot Public and Environmental Health, Trade, Security, Geopolitical concerns and resilience questionings in a product. It has the goal to clear the way towards a more questioning society, where innovations are taking place, and numerous platforms exist where individuals and groups deal with product risks, are affected by them, or affect them, and sometimes are exposed to not yet standardized references of safety, which society must still work to uncover. This discussion contributes to the concept of Product Threat Intelligence.

Keywords: Security, Product Threat Intelligence, Health, Trade

Introduction

> The point is simply to say that human limitations will dog designers at every turn.
> They will infect every design, every project, and the evolution of every system, however clever.
> Orr (2008)

This article is a result of continued discussions regarding Product Threat Intelligence and Product Etiology and how they have evolved under security and, more currently, under geopolitical aspects that, eventually and radically, are capable of building a turn on the paths of political decision-making based on scientific backgrounds of concerns. The terminologies were proposed on the ACLCA 2022 (American Committee of Life Cycle Assessment), under the title of Product Etiology: LCA (Life Cycle Assessments), PCRs (Product Category Rules), EPDs (Environmental Product Declarations), Trade & Security. The developments of this work have evolved alongside the many questions raised by the ACLCA group of experts which are kept under review, with continuous scientific feedback regarding data and methodological inputs. Those concerns represent the state of the art of science being brought to society as the most refined and precise alternative for what levels of transparency may be offered on the traceability of decision-making.

A Changing World on Decision-Making: From Marrakesh Agreement to Product Threat Intelligence on Trade Deals

On *Design on the Edge* (2008), which had already addressed a building environment engineered under the ISO 14.000 series since the nineties, Orr (2008) placed the following quote regarding our role in the processes of project conception: "We are inescapably ignorant and the reasons are many...we are ignorant because of our own limited intelligence and

because we cannot know in advance the unintended effects of our actions on complex systems."

The understanding of sustainability as of complex nature has improved the full scope of areas in the man-made environment, restricting the decision-making process to any direction other than the one that anticipates the possible externalities, making use of the many methods whichever science has placed available of data modeling, turning results into standards, agreements and recommendations, amongst them provided by Life Cycle Assessments (LCAs) with data that has turned available addressing those impacts. "The Interventions are the beginning of the environmental mechanism that ultimately are related to endpoints, which is when damage occurs to areas or conditions we aim to protect and avoid damage" (Tom Gloria, 2014).

The practice of LCAs has allowed continued update of data since the nineties, while also nurturing additional questions on the long run of scientific findings, including changes in product engineering. A relevant aspect to highlight is how society has evolved from the initial statements of the Marrakesh Agreement to the current strengthening of science in decision-making processes. These processes now present advanced geopolitical negotiations that, in some cases, have become matters of national security.

The Marrarrakesh Agreement

> In Deuteronomy it is recorded that the Hittites suffered in great anguish from the twenty years of pestilence that followed their importation and enslavement of Egyptian prisoners of war.
> McMichael (2001)

In 2023, the World Trade Organization report stated that "With security considerations an increasingly influential factor in trade policy, the report finds that some reshuffling of current trading relationships may result from today's tensions but warns that taking this too far would be counterproductive" (WTO, 2023, in Foreword by the WTO Director-General).
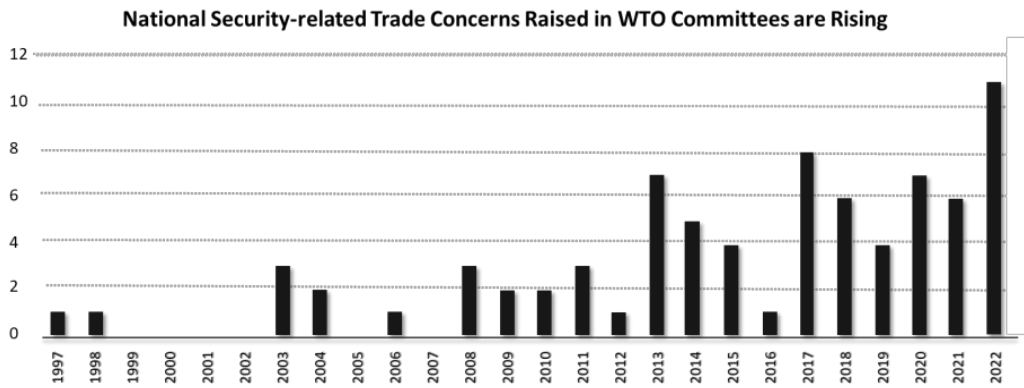
Figure 1: National Security related trade concerns raised in WTO Committee's on the rise

Source: WTO STC Database, https: tradeconcerns.wto.org/en.

Depicts the number of Specific Trade Concerns (STC) relating to national security between 1997 and 2022 raised in the market access import licensing, SPS and TBT Committees. Trade concerns raised at the Council or Trade and Goods (CTG) are not reported in the STC Database.
STC - Specific Trade Concerns
SPS – Sanitary and Phytosanitary Measures
TBT – Technical Barriers to Trade
CTG - Council for Trade in Goods

The signing of the Marrakesh Agreement occurred in April 1994. The following steps were conducted to the Birth of the World Trade Organization on 1st of January 1995. The contents of the agreement were meant to admit the value of relations in the field of international trade. The document described the demand of the agreement based on the understanding that the: "… field of trade and economic endeavor should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development" (Marrakesh Agreement Establishing the World Trade Organization. WTO 1994).

The statement explicitly addressed the demand from developing countries for secure integration into international trade, within an environment of reciprocal advantageous agreements, concomitant with the aim of eliminating the discriminatory treatment in international trade relations. Such empowerment has provided the WTO the mandatory ownership of a legal personality, accorded by each of its members, with the necessary legal capacity for the exercise of its functions. At the time it was created, it was already under an environment of deepening concerns and policies regarding security, such as precautionary principles and some already existing international treaties in the environmental area, such as the Basel Convention (1992 Convention on the Control of Transboundary Movements of Hazardous Waste and their Disposal). Over time, it has advanced in questioning the local aspect of the national response to global challenges, as well as the need for reframing global concerns to fit within national circumstances. Understanding the worldwide asymmetries has prompted today's concerns regarding the possibilities of supply chain disruptions.

The uncertainty regarding security pressures on trade from the current WTO administration poses a risk of becoming counterproductive and characterizing trade barriers. Despite being based on legitimate concern, it may be argued that those concerns originated from the evidence of anomalies highlighted by scientific findings and scrutiny. Therefore, an investigative approach is required to address and prioritize the valuation of populations and environmental health, as these are justifiable concerns based on the following facts:

- There are inequality gaps in education and deeper scientific background on a worldwide scale as recognized by International Institutions such as the WTO, World Health Organization (WHO), etc.
- Environmental Values are differently valued in decision-making;
- There are risks associated with a lack of governance and varying local capacities for resilience in the face of the unknown technological risks embedded in products.
- The right to health as a human right must not be despised.
- There is a growing risk of organized crime and artificial intelligence (AI), necessitating more aggressive requirements from the WTO. These requirements must be mandatory, and humanitarian rights and ethical principles must be respected.

Fortunately, more aggressive requirements on sustainable attributes transparency are on a permanent and inexorably move on the rise of additional scientific data, highlighting concerns and providing a trustful base of awareness, as clearly noticed in Figure 1 data from the WTO. Despite the new vision appeals that with excessive contentious measures on the shaping of trade policies, the results would not be socially sustainable, under a deeper understanding of the aftermaths of externalities with regards to safety and public and environmental health, security must matter as a priority condition. Not only environmental externalities may be hidden, but social ones, involving child abuse, animal suffering, money laundry, and more. It is required that society improves on the guarantee of safer operational environments on deals,

non-compliance with abuse, valuing respect both to localness capabilities as of its shareholders, and the avoidance of third-party risks.
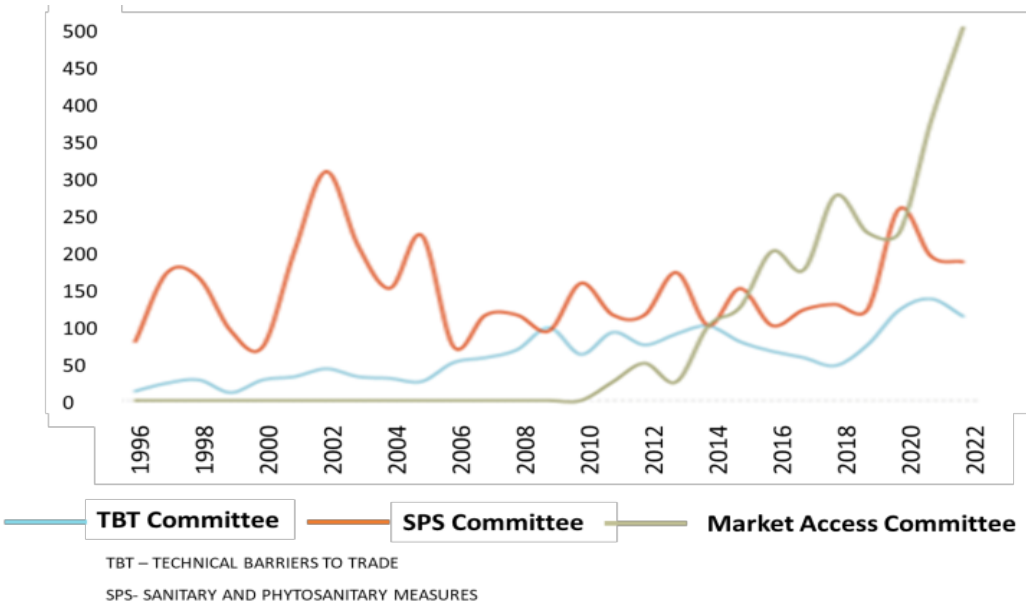
Figure 2: Trade concerns raised in the Market Access, SPS and TBT Committees, 1996-2022
Source: WTO STC Database 2023, https: tradeconcerns.wto.org/en.
SPS – Sanitary and Phytosanitary Measures - TBT – Technical Barriers to Trade
Note: The figure includes both new and repeatedly raised concerns.

The Claim for Security

> For extra precautions, the Pharaoh employed night watchmen to keep watch over homes and towns.
> These watchmen would then alert soldiers of any dangers. The Cat was a sacred animal to the Egyptians,
> and many believed it would warn its owners of a burglary through specific movements of its tail and body.
> Security In Egypt

As proposed by Rothschild (1995), the evolved concept of security represents one of the many contributions that raise questions over privileged immunity amongst the platform of international trade and commerce. In the 1990s, security gained an extended version, it added a new sense. According to Rothschild (1995, p. 55), "the concept of security is extended from the security of nations to the security of the international system, or of a supranational physical environment: it is extended upwards, from the nation to the biosphere." Some speculative questions have arisen regarding the security of the individual. Under certain legitimate risks, such as those related to environmental health, disruptions may occur in the name of local sovereignty and human rights.

1.	2.	3.	4.
PROVIDE GUIDANCE	**GUIDANCE OF PUBLIC OPPINION**	**CONTEST**	**TO INFLUENCE**
Sort of guidance to the policies made by governments not by speculative means.	Guidance of public opinion about policy to suggest a way of thinking about security.	Contest of existing policies, oppose an intelligible danger.	To influence directly the distribution of money and power, with the objective of influencing of contesting existing security policies.

Figure 3: The Four Principles of Security presented by Rothschild (1995)
Source: Rothschild (1995)

The extended contribution of the WTO has surpassed the original document it gave birth to and has accompanied the many areas of science and innovations that have landed on the international trade discussions and replied to those inputs from security concerns under the leadership of experts on investigations taking place on a worldwide scale. Multilateral trade agreements evolved under deepened security requests. Those have appeared in the legal arguments displayed in many cases as international litigious complaints, on demand to avoid weak systems, lacking significant structures to perceive damage - especially those yet not embodied under agreements or rules. Those agreements and conventions that convert into pressure for official regulatory bodies become accorded by its members to every partnership the signatory parties belong to. Such is the reason that additional definitions of security are brought up on the following:

Historically, the word secure appeared in the English language in the 16th century. From Latin origin, secures means freedom from anxiety (Baldwin, David, 1997). Security means protection from, or resilience against potential harm or other undesirable status caused by others, by restraining the freedom of others to act.

There are a variety of attributes addressing security, and those may vary according to what is at stake and which are required and selected and prioritized for every modeling purpose, possibly based on previous missteps and driven data which may have resulted from meaningful concerns, whichever are required for further improvements. Additional Definitions of Security are listed below:

- Security is protection from, or resilience against, potential harm (or unwanted coercion) caused by others, by restraining the freedom of others to act. Beneficiaries of security may be of persons and social groups, objects and institutions, ecosystems or any other entity or phenomenon vulnerable to unwanted change (Security, 2024).
- Security is taken to be about the pursuit of freedom from threat and the ability of states and societies to maintain their independent identity and their functional integrity against forces of change, which they see as hostile.
- Security — 1. Measures taken by a military unit, activity, or installation to protect itself against all acts designed to, or which may, impair its effectiveness. (JP 3-10) 2. A condition that results from the establishment and maintenance of protective measures that ensure a state of inviolability from hostile acts or influences. (JP 3-10) 3. With respect to classified matters, the condition that prevents unauthorized persons from having access to official information that is safeguarded in the interests of national security. See also national security. (JP 2-0) (DOD- Directory of Defense – U.S.A. Dictionary of Military and Associated Terms- 2019).
- According to Barry Buzan, the concept must be seen as a: "derivative of power". It reduces the complex concept of security to a mere "synonym for power". This view could be considered relevant during the period of the World Wars, where states seemed to be in a constant struggle for power. However, in the post-Cold War era, the concept of Security has become much more multifaceted and complex. Buzan defends a broader framework of security and the incorporation of concepts that were not previously considered to be part of the security puzzle.
- Rothschild´s (1995) on Security: The security of individuals in this sense – the sense of freedom from the prospect, and thus the fear, of personal violation – has been of decisive importance to liberal political thought.
- Buzan´s approach political and military security must be looked alongside with other dimensions which are: economic, societal and environmental or ecological.

The Foreseeing of Security Issues on a Product

The U.S. Dictionary of Military Terms (DOD, 2019) defines a transnational threat as "any activity, individual, or group not tied to a particular country or region that operates across international boundaries and threatens United States national security or interests (JP 3-26)".

The U.S. Dictionary of Military Terms (DOD, 2019) defines "intelligence production" as the process of integrating, evaluating, analyzing, and interpreting information from single or multiple sources into finished intelligence for known or anticipated military and related national security consumer requirements. The concept of intelligence production, addressed to a product, drives investigators to fill gaps of knowledge and comes with scientific and methodological observations and data, data alerts, time, and organized modeling of product etiology data. Product threat intelligence is required, both for international affairs and for the sourcing for domestic intelligence preparedness to commit to identifying risk and harm, provide quick response and bounce back capability – resilience – followed by a structured team with appropriate competence to respond to the outcomes.

The risks of transnational threat to security may occur under the circumstances that the introduction of a product, under the unknown impacts regarding a new process and (or) components or even a way to perform a function, which according to what environmental management standards addresses on LCAs, the category of impacts may affect locally, regionally and on a global scale. The reverse logistics of those impacts may provide intelligence to denounce, for instance, the possible existence of parallel supply chains, illicit trade, and supply chains whichever may lack compliance on best practices of standardization rules, labels and additional criteria and rules that may be applied on a specific site. The following image displays the CMAP of the concept of Product Threat Intelligence and Product Etiology (Gueiros, 2022).
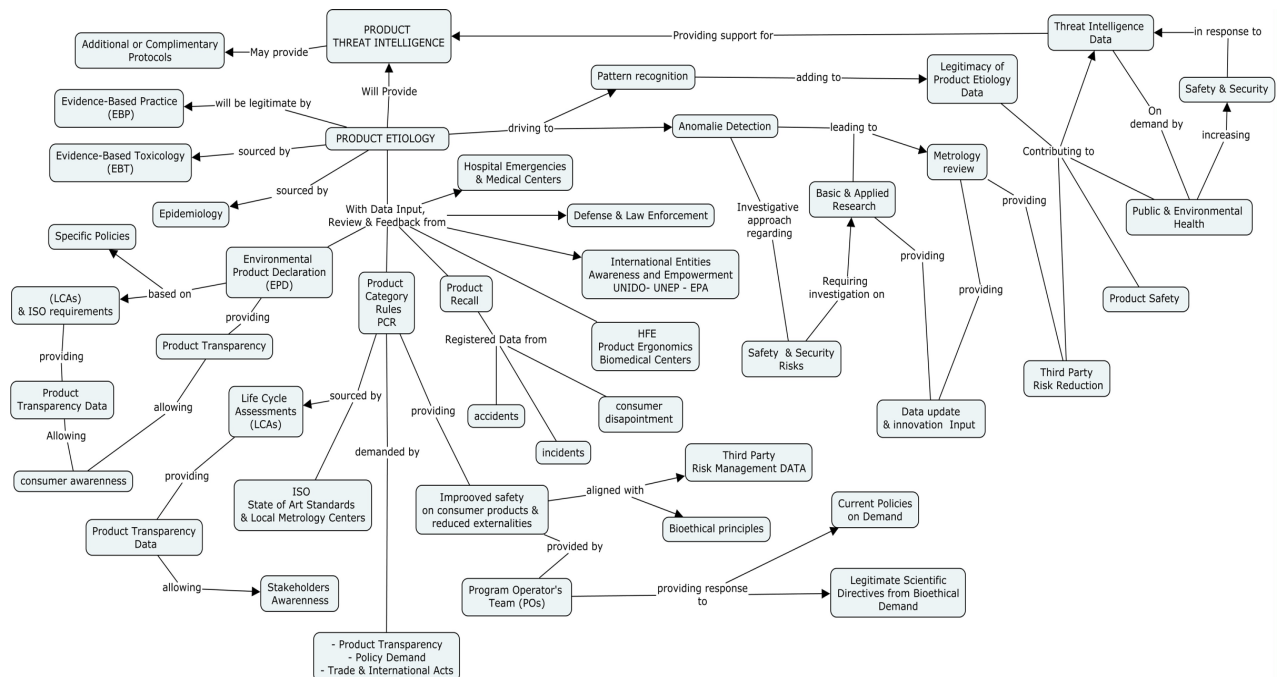
Figure 4: Information System on Product Etiology and on Product Threat Intelligence CMap
Source: Gueiros (2022)

We consider that product etiology data will supply the updates for and from industrialized and consumer products on product threat intelligence while it performs with the feeding of its system itself based on accident registers, recalls, complimentary scientific findings, and the notifying of *on-demand* requirements such as new metrological references to be replaced.

Design for Critical Infrastructure Resilience

> …the construction of both local and the global crucially depends on the production of knowledge and its interaction with power. How we understand and represent environmental problems is inescapably linked to the ways in which we choose to ameliorate or solve them.
>
> Jasa off & Martello (2004)

It is important to state that populations are not invulnerable, but rather resilient. Nonetheless, one must question: At what levels of resilience may one system not be under suffering or (and) under torture? Resilience, in this case, may be placed as an attribute. This attribute is of further complexity and relevance when modeling Health and Environment, as it affects populations' health differently, and the value of such attribute inexorably addresses both ethical and scientific inputs. Thus, the concept must be approached from a systems perspective. This insight can be illustrated by various cases. As noted by Greenpeace: "Death is not the only damage endpoint as animals may suffer loss of hearing, bodily harm as well as disruption of feeding, mating and migration…. endangered creatures are harmed or displaced by seismic testing or other noise pollution in the oceans. As a first step to bring public awareness to this issue, we determined it critically important to collect and review the limited amount of existing scientific research about noise in the oceans and its impact on marine mammals."

The Energy Sector is one – if not the most – sensitive area on outlining strategic scenarios and international interests regarding power. The Argonne National Laboratory (U.S. Department of Energy Laboratory), Decision and Information Sciences Division has elaborated a work acknowledging the aspects of security under the inputs of resilience concept. The document entitled *Resilience: Theory and Applications* (Carlson, 2012) has provided an understanding of critical infrastructure resilience and offered paths to achieve the objective. Resilience is defined by many experts, and amongst various definitions, Argonne defines it as "the capability to bounce back." Other general definitions are placed as references, such as "the capacity of a system to survive, adapt and grow in the face of change and uncertainty" (Fiksel, 2006, p. 21). The many contributions on the area advanced additional applications of the concept, such as infrastructure resilience and community resilience, "Infrastructure resilience is the ability to reduce the magnitude, impact, or duration of a disruption. Resilience is the ability to absorb, adapt to, and/ or rapidly recover from a potentially disruptive event" (NIAC 2009, p 12).

The advancement of the concept towards local capabilities to confront adverse scenarios is highlighted in the statement, "Community resilience is the capacity of a community, its members and the systems that facilitate its normal activities to adapt in ways that maintain functional relationships in the presence of significant disturbances" (Paton 2007, p.7). The figure below depicts the relationship between components of resilience and resilience-enhancing measures.

ANTICIPATE	RESIST	ABSORB	RESPOND	ADAPT	RECOVER
Preparedness	Mitigation		Response		Recovery
Activities taken by an entity to define the hazard environment to which it is subject	Activities taken prior to an event to reduce the severity or consequences of a hazard.		Immediate and ongoing activities, tasks, programs, and systems that have been undertaken or developed to manage the adverse effects of an event.		Activities and programs designed to effectively and efficiently return conditions to a level that is acceptable to the entity.

Figure 5: Relationship between components of resilience and resilience-enhancing measures
Source: Carlson (2012, p. 22)

The concept of critical infrastructure resilience matters: if no action is provided on the eminence of a threat, if the community is not prepared, its resilience capability will probably fail.
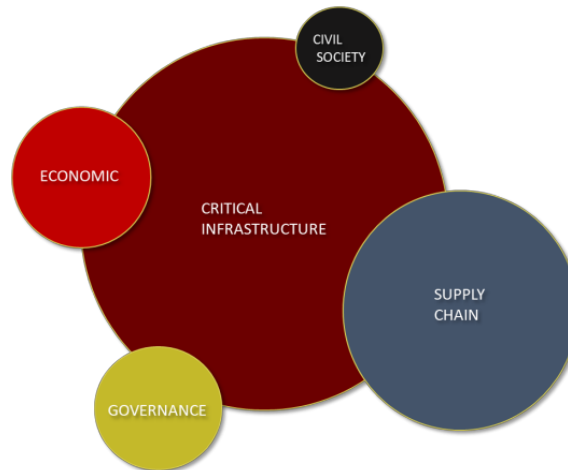
Figure 6: Site Assessment Contribution to Community Resilience Analysis
Source: Carlson (2012, p. 22)

Security, and whatever paths it may take to address local capabilities, must mandatorily contribute to the intent of planning and fostering community resilience. The bearing of security recalls contemporary strategies of war, which require a nation to focus on designing resilience to provide preparedness and capabilities in adverse contexts. This includes addressing topics that may pose risks of compromising local governance and, therefore, local sovereignty, affecting a diversity of aspects and the many scenarios in which they may blend.

Numerous trends have called for adjustments to grounds for security concerns. Among them, the energy sector, for example, has provided incentives for alternative sources of energy over the last decades, contributing to concerns that decision-makers can no longer ignore. Despite compliance, products may not necessarily have had a full report or further extended investigation of their risks fully accessed on the whole supply chain, which can be of minor and of controlled nature, and some may be of a hidden, not yet standardized risk.
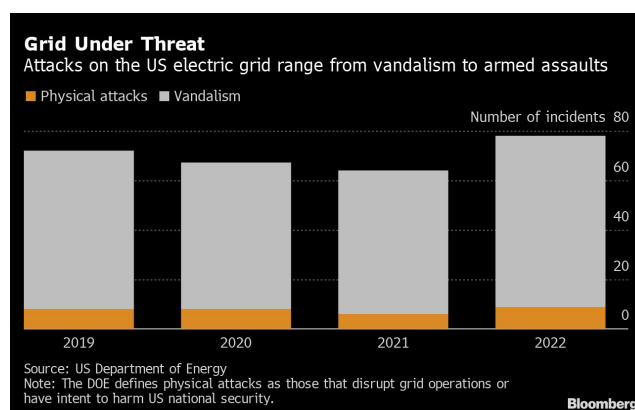
Figure 7: Attacks on the U.S. electric grid range from vandalism to armed assaults.

Source: Bloomberg

Current trends that rely on digital systems, AI and nanotechnology applications are recurrent examples, as this area addresses continuous innovative platforms for society. Still, there are uncertainties of yet unknown risks for premiere users and applications. This situation plunges under formal structures of power unawareness and (or); unpreparedness and (or) of parallel power influence, including those from organized crime actions, which may force the

allocation of decision-making on sites locally disowned of comprehensive security, as we understand that the current world status on education, and its access, is globally asymmetrical.

The combat of climate impacts, for instance, has made solar and wind electricity generation systems accessible and economically viable, with cheaper, more efficient and successfully implemented solutions for the electricity generation grid composition. Nonetheless, under product threat intelligence, some registers have forcefully pressured involved parties to move deeper into the product system review, observing a full perspective of Public Health, including use-phase impacts and diverse Supply Chain challenges. For decades, investigations of the negative externalities of wind farms on populations, regarding noise and vibration emissions in the use phase have been researched; publications such as Gill & Taylor (2001) have registered that: "The installation of offshore wind turbines will require the transport of electricity between turbines and to the mainland. Modem day technology transports electricity via submarine cabling which in the process produces electromagnetic fields around the cables. Sharks, skates and rays (subclass Elasmobranch) have long been known to exploit the electric outputs of organisms in saltwater, to detect and capture their prey, and they are also thought to use the Earth's magnetic field for navigation. Therefore, there exists the potential for electrosensitive species to detect and respond to the electromagnetic fields produced by offshore power installations."

Thus some researchers consider the nocebo effect hypothesis (Tonin & Colagiuri, 2016), the negative impact has equally evolved to address the public, environmental health and security appeal on the many areas it may be necessary to the avoidance of safety risks, geopolitical misfortunes and in parallel mapping where the product system and (or) innovation must be required of engineering improvement, further regulated or even disrupted (Ashford & Hall, 2011). Could parties been blinded by political incentives, business opportunities and government deadlines despite not yet having a deep understanding of local populations, geographic characteristics and complementary requirements to further investigate? Such as how power emissions will differently affect local populations, and the many paths this may be translated into national security issues. Scientific uncertainties regarding emissions from both onshore and offshore wind farms have been contemplated, focusing on the reliability analysis of the wind power system industry. The reliability analysis methods have been used for mapping solutions on product systems, however, according to Zhu and Li (2018), those have "mainly focused on gear transmission systems of wind turbines and ignore the influences of other systems."

The adverse impacts have been alarmed and researched, becoming available as scientific routes for responsible decision-making in society. However, uncertainties remained on the subject, which depend on the courage of policymakers to require adjustments based on these concerns. In most cases, this will require that standards and (or) possibly methods on metrology may be mandatorily reviewed. According to Frederiksen (2013), "In addition to the traditional methods for microphone sensitivity and frequency response calibration, new development areas, like for example wind power, has created needs for low-frequency and infra-sound calibration, down to 0,1 Hz."

Conclusions

The amount of ISO standards that are periodically dispatched and turned available (and reviewed) on the regulatory environment, have improved access for safer decisions, therefore, edged for improved trade relations and transparency on geopolitical warnings. Without a proper environment of awareness, the losses may place critical security challenges, that may remain unsolved for longer periods. When dealing with inequalities, "If we do not have a transparent system where there is trust, we will get to the bottom because everyone will try to subsidize, and developing countries will lose because they will not have the fiscal space to be

able to join the subsidies race. Specific subsidies make complicate for others to compete an issue (WTO Report, 2023, Ngozi).

Among the diverse case studies that may be further investigated under reviews that call for adjustments on security concern, we must remember that those are relevant concerns. Some cases remain unsolved and require deeper investigations, such as the assessments of certain categories of emissions' impact on health. For example, the increased consumption of electrical energy has subjected the environment to noise, vibration, and electromagnetic pollution. Extra-auditory physiological impacts of low frequency noise on humans and other populations have been researched under Public and Environmental Health. Additionally, in the context of security, emissions have been linked to severe hazards that remain under investigation, such as the known Havanna Syndrome, that has reported unusual noise, abnormal auditory phenomena, possibly violating safety and security and under sonic attack (Baloh & Bartholomew, 2020), affecting U.S. Embassy personnel.

Biological effects resulting from noise and vibration emissions depend on a system approach investigation involving three components: source, path, and receptor (I. L. Vér & L. Beraneck, 2006). The impacts are associated with dosimetry, propagation path and the characteristics of the receptor population. According to Balmori (2009), the dose will indicate long-term accumulative effects, and the dose affects differently among species.

The turning of knowledge into milestones on product performance, nonetheless, requires that the fragmented vision of what is wrong and where it went wrong, to be questioned of what should be done about the perceived harm and threats, considering that, possibly, those findings may be likely to confront adverse political reactiveness.

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Building Sustainable Organizations: How Emotional Intelligence Drives Transformational Leadership

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Abstract: Effective leadership has become crucial to organizational success with an increasing global emphasis on sustainable business practices. Transformational leadership, characterized by vision, inspiration, and individualized consideration, is key to employee engagement and innovation. Emotional intelligence enhances these leadership attributes by fostering self-awareness, empathy, adaptability, and interpersonal skills, contributing to effective decision-making and ethical corporate governance. This study examines the relationship between emotional intelligence and transformational leadership and their impact on corporate sustainability. Data were collected using a quantitative research approach from 578 project managers certified by the Project Management Institute across various industries. Emotional intelligence was evaluated using the Bar-On Emotional Quotient Inventory, and leadership behaviors were measured through the Multifactor Leadership Questionnaire. Results indicated a strong correlation between high emotional intelligence and transformational leadership, with emotional intelligence explaining 19 percent of the variance in transformational leadership. Stress management and adaptability scored highest, while interpersonal relationships scored the lowest. The study also highlights the role of emotionally intelligent leaders in corporate sustainability by fostering ethical business practices and stakeholder engagement. The findings emphasize the need for organizations to integrate emotional intelligence training into leadership development programs to enhance sustainability efforts. Future research should examine its long-term impact across different industries and cultural contexts.

Keywords: Emotional Intelligence, Transformational Leadership, Corporate Sustainability, Leadership Development

Introduction

The increasing complexity of the corporate environment requires leaders who can navigate change, inspire employees, and foster sustainable business practices. Transformational leadership has emerged as a critical factor in achieving these goals, particularly when coupled with emotional intelligence. Emotional intelligence enhances a leader's ability to motivate teams, manage stress, and promote ethical decision-making. Additionally, corporate sustainability has become a central concern for organizations, requiring leaders who can balance financial success with environmental and social responsibilities. This paper investigates the intersection of emotional intelligence, transformational leadership, and corporate sustainability.

Emotional intelligence (EI) is a fundamental component of effective leadership, influencing decision-making, team cohesion, and overall organizational success (Goleman, 2017). Leaders with high EI demonstrate self-awareness, empathy, and emotional regulation, essential for fostering a positive work environment (Mayer et al., 2021). Research has shown that emotionally intelligent leaders can better manage workplace stress, navigate interpersonal conflicts, and promote a culture of trust and collaboration (Salovey & Grewal, 2020). These qualities are critical in transformational leadership, which seeks to inspire and motivate employees beyond transactional exchanges.

Transformational leadership comprises four key components: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Riggio, 2018). Transformational leaders inspire their teams by setting a vision, challenging the status quo, and fostering innovation (Judge & Piccolo, 2019). Leaders with high EI are particularly well-suited for transformational leadership, as they can effectively communicate

their vision, recognize and address employee concerns, and build a supportive organizational culture (Barling et al., 2019). Studies suggest that organizations led by transformational leaders experience higher employee engagement, job satisfaction, and performance outcomes (Avolio et al., 2022).

Corporate sustainability encompasses economic, social, and environmental responsibilities, requiring a leadership approach that integrates ethical considerations with long-term value creation (Elkington, 2019). Transformational leadership is vital in advancing sustainability initiatives by aligning business strategies with societal and environmental goals (Eccles et al., 2020). Leaders prioritizing corporate sustainability implement policies promoting environmental conservation, social responsibility, and ethical governance (Carroll & Brown, 2021). Research indicates that emotionally intelligent leaders are more adept at fostering stakeholder engagement and driving sustainable change (Haque et al., 2021). Organizations that embrace transformational leadership and emotional intelligence are better positioned to achieve corporate sustainability objectives while maintaining competitive advantage (D'Amato & Roome, 2022).

Problem Statement

Despite extensive research on emotional intelligence and transformational leadership, there remains a significant gap in understanding how these leadership attributes contribute specifically to corporate sustainability (Avolio et al., 2022). While transformational leadership is widely recognized as a key driver of organizational success, little empirical research has examined its direct impact on long-term sustainability initiatives (Eccles et al., 2020). Moreover, the role of emotional intelligence in facilitating sustainable corporate practices is not well understood, particularly in industries facing dynamic environmental and social challenges (Haque et al., 2021).

This study addresses this gap by exploring how emotional intelligence and transformational leadership jointly influence corporate sustainability outcomes. By bridging this gap, the study will contribute to the growing knowledge of sustainable leadership and offer practical recommendations for organizations aiming to integrate sustainability into their corporate strategies (D'Amato & Roome, 2022). Understanding this relationship is crucial for developing leadership development programs that enhance managerial effectiveness and promote long-term environmental and social responsibility (Carroll & Brown, 2021).

Significance of the Study

The findings of this research have significant implications for leadership development, corporate governance, and sustainability strategy. This study demonstrates how emotional intelligence enhances transformational leadership for corporate sustainability and provides a theoretical and practical framework for developing more effective leaders (Bass & Riggio, 2018). Organizations that prioritize emotional intelligence in leadership training programs can cultivate leaders who are effective in managing teams and committed to sustainability goals (Goleman, 2017).

Furthermore, this study contributes to the broader discussion on corporate sustainability by offering empirical evidence on how leadership behaviors impact sustainable business practices (Elkington, 2019). The research findings will benefit corporate executives, policymakers, and leadership development professionals seeking to implement sustainability-driven leadership models (Eccles et al., 2020). By emphasizing the role of emotional intelligence in sustainability leadership, this study provides insights essential for organizations aiming to enhance their long-term viability and social impact (D'Amato & Roome, 2022).

Theoretical Framework

A strong theoretical foundation is essential for understanding the relationship between emotional intelligence, transformational leadership, and corporate sustainability. This section outlines the key theories underpinning these concepts.

Emotional Intelligence Theories

The study of emotional intelligence is grounded in several foundational theories. Goleman (1995) introduced the concept of EI as a critical factor in leadership effectiveness, emphasizing self-awareness, self-regulation, motivation, empathy, and social skills. Bar-On (1997) expanded on this with the Emotional Quotient Inventory (EQ-i), which defines EI as a set of emotional and social competencies that influence personal and professional success. Salovey and Mayer (1990) were among the first to conceptualize EI as the ability to perceive, understand, and manage emotions, a framework that has been widely accepted in psychological research.

Leadership Theories

Transformational leadership theory, developed by Burns (1978) and later expanded by Bass (1985), describes leaders who inspire, motivate, and challenge their followers to exceed expectations. This leadership style is particularly relevant in corporate settings, where innovation and long-term vision are necessary for sustainability (Bass & Riggio, 2018). Other relevant leadership theories include Servant Leadership (Greenleaf, 1977), which emphasizes leaders' role in serving their stakeholders, and Authentic Leadership (Avolio & Gardner, 2005), which focuses on self-awareness, transparency, and ethical decision-making.

Corporate Sustainability Theories

The Triple Bottom Line (TBL) framework, developed by Elkington (1997), is one of the most widely used theories in corporate sustainability. It suggests that businesses should focus on three key areas: people (social responsibility), planet (environmental stewardship), and profit (economic performance). Stakeholder Theory (Freeman, 1984) also plays a crucial role in sustainability, arguing that organizations must consider the interests of all stakeholders, not just shareholders, to achieve long-term success. Additionally, the Resource-Based View (RBV) theory (Barney, 1991) suggests that organizations with strong leadership and sustainable practices can develop a competitive advantage.

Literature Review

The interplay between emotional intelligence (EI), transformational leadership, and corporate sustainability has garnered significant scholarly attention in recent years. This literature review synthesizes findings from recent studies to elucidate how EI and transformational leadership converge to promote sustainable organizational practices.

Emotional Intelligence and Transformational Leadership

Emotional intelligence, defined as the capacity to recognize, understand, and manage one's own emotions and the emotions of others, is a critical determinant of effective leadership. Almahasneh et al. (2023) investigated the impact of managers' EI on transformational leadership styles within firms. Their study revealed a positive correlation between managers' EI and adopting transformational leadership behaviors, suggesting that emotionally intelligent managers are more adept at inspiring and motivating their subordinates.

Similarly, Haque et al. (2021) examined the role of EI in ethical decision-making and transformational leadership. Their research indicated that leaders with high EI are more likely to engage in ethical decision-making and exhibit transformational leadership qualities. This

underscores the premise that EI enhances interpersonal relationships and fosters an ethical organizational climate.

Rahman et al. (2020) further explored the relationship between EI, transformational leadership, creativity, and job performance. Their findings demonstrated that EI is positively associated with transformational leadership, which mediates the relationship between EI, creativity, and job performance. This suggests that transformational leaders leverage their emotional competencies to cultivate innovative thinking and enhance employee performance.

Transformational Leadership and Corporate Sustainability

Transformational leadership is characterized by the ability to inspire and motivate followers toward achieving a shared vision, often leading to profound organizational change. Amin et al. (2018) investigated how transformational leadership contributes to developing organizational sustainability capabilities. Their study found that transformational leaders are pivotal in enhancing sustainable supply chain management by fostering a culture of continuous improvement and environmental responsibility.

Malik (2017) examined the influence of transformational leadership components on job satisfaction and organizational commitment. The study revealed that transformational leadership significantly enhances employees' job satisfaction and commitment, which is essential for successfully implementing sustainability initiatives. Satisfied and committed employees will likely embrace and drive sustainable organizational practices.

D'Amato and Roome (2022) delved into the role of leadership in promoting sustainability, emphasizing the importance of both EI and transformational leadership. Their research suggested that leaders who exhibit high levels of EI and transformational behaviors are more effective in embedding sustainability into organizational strategies. This dual capability enables leaders to navigate the complexities of sustainability challenges while motivating their teams toward sustainable goals.

Integrating Emotional Intelligence, Transformational Leadership, and Corporate Sustainability

The convergence of EI and transformational leadership creates a synergistic effect that propels organizations toward sustainability. Barling et al. (2019) proposed a multi-level perspective, indicating that transformational leaders with high EI are better equipped to manage the emotional complexities associated with organizational change, thereby facilitating the adoption of sustainable practices. Their study highlighted that such leaders can effectively align organizational objectives with sustainability goals, ensuring long-term viability and ethical governance.

Avolio et al. (2022) provided a comprehensive overview of current leadership theories, emphasizing the evolving nature of transformational leadership in the context of contemporary challenges. They posited that integrating EI into transformational leadership models is imperative for addressing the multifaceted demands of corporate sustainability. This integration enables leaders to foster resilience, adaptability, and a proactive stance towards environmental and social responsibilities.

Recent literature underscores the intertwined relationship between emotional intelligence, transformational leadership, and corporate sustainability. Emotionally intelligent leaders who adopt transformational styles are instrumental in driving sustainability.

Research Method

This study employed a quantitative research design to examine the relationship between emotional intelligence and transformational leadership and their implications for corporate sustainability. A structured survey was used to collect data from 578 project managers, all of whom were certified Project Management Professionals (PMPs) and members of local PMI

chapters in Washington, D.C., Silver Spring, MD, and Montgomery County, MD, as well as the global PMI Information Systems Specific Interest Group (PMI-ISSIG).

Participants and Data Collection

The target population consisted of PMI-certified project managers working across various industries, including business services, government, healthcare, finance, education, and engineering. Participants were invited to complete a general questionnaire, the Multifactor Leadership Questionnaire (MLQ-5X), and the Bar-On Emotional Quotient Inventory (EQ-i) via a dedicated research website. Eight hundred forty-two project managers accessed the survey, 264 completed portions, and 578 provided complete responses.

Exhibit 1. Experience by Gender (N = 578)

Position description	Males	Females	Total
Junior project manager (1-5 years of experience)	42	43	85
Mid-level project manager (6-10 years of experience)	73	101	174
Senior project manager (11 years and above)	188	130	318

Measures

- **Emotional Intelligence:** Measured using the Bar-On Emotional Quotient Inventory (EQ-**i)**, which assesses five broad areas of EI:
    1. Intrapersonal Skills (e.g., self-awareness, self-regard)
    2. Interpersonal Skills (e.g., empathy, social responsibility)
    3. Stress Management (e.g., stress tolerance, impulse control)
    4. Adaptability (e.g., problem-solving, flexibility)
    5. General Mood (e.g., optimism, happiness)
- **Leadership Behavior**: Evaluated using the Multifactor Leadership Questionnaire (MLQ-5X), which categorizes leadership styles into:
    1. Transformational Leadership (e.g., idealized influence, inspirational motivation)
    2. Transactional Leadership (e.g., contingent rewards)
    3. Laissez-Faire Leadership (e.g., passive avoidance)

Data Analysis Methods

The collected data were analyzed using various statistical techniques, including:
1. **Descriptive Statistics:** Used to summarize participant demographics, industry distribution, and leadership behavior profiles.
2. **Analysis of Variance (ANOVA):** Conducted to identify statistically significant differences in leadership behaviors based on emotional intelligence levels.
3. **Regression Analysis:** Used to examine how different components of emotional intelligence predict transformational leadership behaviors.
4. **Correlation Analysis:** Applied to measure the strength of relationships between emotional intelligence components and leadership styles.

Reliability and Validity

The **EQ-i and MLQ-5X** have been extensively validated in prior research, demonstrating high reliability and validity in assessing emotional intelligence and leadership styles. The survey instruments were pretested to ensure clarity and accuracy before deployment.

Data Collection and Analysis

The study assessed the relationship between emotional intelligence and transformational leadership across various industries. Participants were selected from three Washington, DC, PMI chapters (with over 10,000 members collectively) and the global PMI ISSIG network (comprising more than 15,000 professionals). The final sample included 578 project managers representing 17 industry sectors. Exhibit 2 provides an overview of participant distribution.

Exhibit 2. Survey Participants by Industry (N = 578)

Industry type	Males	Females	Total
Business services consultant	42	27	69
Communication carrier	4	6	10
Construction/architecture/engineering	10	6	16
Data processing services	24	10	34
Education	2	4	6
Federal government	39	40	79
Finance/banking/accounting	22	19	41
Health sector	9	19	28
Insurance/real estate	12	16	28
Legal services	0	2	2
Manufacturing	17	12	29
Other	30	42	72
No response	69	48	116
Publishing/broadcast/advertising/public relations/marketing	4	4	8
Research/development lab	5	6	11
Retailer/wholesaler/distributor	7	2	9
State or local government	6	7	13
Transportation	1	1	2
Utilities	2	3	5

Emotional Intelligence Assessment

Emotional intelligence was measured using the Bar-On EQ-i, a standardized tool with a general population mean 100. Participants in this study scored an average of 101.07 (SD = 13.02), slightly above the general population mean. Among the five major components, stress management (103.15) and adaptability (102.53) had the highest scores, while interpersonal skills (98.41) and general Mood (99.55) were slightly below average. The lowest subcomponent score was interpersonal relationships (97.02), whereas assertiveness, independence, stress tolerance, and problem-solving scored above 103. Exhibit 3 outlines the descriptive statistics.

Exhibit 3. Descriptive Statistics: Emotional Intelligence Components (N = 578)

	Min.	Max.	*M*	*SD*
Total emotional intelligence	45	135	101.07	13.205
Intrapersonal	53	130	101.71	13.693
Self-regard	47	125	99.99	13.595
Emotional self-awareness	43	130	101.59	15.670

Assertiveness	46	131	103.35	13.504
Independence	55	126	104.29	12.381
Self-actualization	45	124	99.30	13.896
Interpersonal	27	130	98.41	14.471
Empathy	30	123	98.90	15.210
Social responsibility	41	122	100.23	13.076
Interpersonal relationship	38	128	97.02	15.533
Stress management	45	132	103.15	13.459
Stress tolerance	47	133	103.64	13.199
Impulse control	39	129	101.71	13.993
Adaptability	62	137	102.53	12.070
Reality testing	40	130	100.66	13.238
Flexibility	61	135	102.90	13.792
Problem-solving	74	128	103.05	10.775
General Mood	38	128	99.55	13.084
Optimism	50	127	101.27	12.093
Happiness	38	124	98.83	14.387

Leadership Behaviors

Leadership styles were assessed using the Multifactor Leadership Questionnaire (MLQ), a 5-point scale measuring transformational, transactional, and laissez-faire leadership behaviors. Transformational leadership emerged as the dominant style, with an average score of 4.23. Among transformational leadership attributes, individual consideration (4.31) and idealized influence (4.22) ranked highest. Transactional leadership scored an average of 3.16, with contingent reward (4.05) being the highest-rated subcomponent. Laissez-faire leadership was the least reported behavior (1.54). Exhibit 4 provides an overview of leadership behavior scores.

Exhibit 4. Descriptive Statistics: Multifactor Leadership Components (N = 578)

	Min.	Max.	*M*	*SD*
Transformational leadership	4.06	4.35	4.23	0.1503
Idealized influence attribute	4.13	4.35	4.22	0.0925
Idealized influence behavior	4.13	4.13	4.22	0.0925
Inspirational motivation	3.86	4.38	4.19	0.2299
Intellectual stimulation	4.13	4.35	4.22	0.0925
Individual consideration	4.13	4.51	4.31	0.1862
Transactional leadership	2.63	4.15	3.16	0.6980
Contingent reward	3.61	4.60	4.05	0.4112
Management by exception (active)	2.66	3.58	2.92	0.4458
Management by exception (passive)	1.61	4.27	2.51	1.2371
Laissez-faire leadership	1.47	1.62	1.54	0.0621

Analysis of Variance (ANOVA)

ANOVA tests examined variations in emotional intelligence and leadership behaviors based on gender and experience levels. Significant differences ($p < .05$) were found in eight emotional intelligence components, including emotional self-awareness, empathy, interpersonal relationships, and stress tolerance. Exhibit 5 summarizes these findings.

Exhibit 5. ANOVA Result for Gender

Emotional intelligence variable	*F statistics*	*p values*
Emotional self-awareness	13.808	.000
Independence	5.942	.015
Interpersonal relationship	21.995	.000
Empathy	22.974	.000
Social responsibility	10.680	.001
Interpersonal relationships	19.606	.000
Happiness	6.010	.015

Further analysis of experience levels indicated that senior project managers exhibited higher emotional intelligence scores than their mid-level and junior counterparts. Significant differences were found in stress management, problem-solving, and general Mood. Exhibit 6 and Exhibit 7 present ANOVA results for experience and gender-experience interaction.

Exhibit 6. ANOVA Results for Experience

Variables	*F statistics*	*p value*
Total emotional intelligence	4.254	.015
Intrapersonal relationship	3.538	.030
Self-regard	3.324	.040
Independence	5.142	.040
Stress management	6.164	.002
Stress tolerance	10.867	.000
Adaptability	4.700	.009
Reality testing	6.115	.002
Problem-solving	3.206	.041
General Mood	4.078	.017
Optimism	5.199	.006

Exhibit 7. ANOVA Results for Gender and Experience

Variables	*F* statistics	*p*-value
Interpersonal	6.08	.000
Empathy	6.284	.000
Stress tolerance	4.821	.001
Social responsibility	3.686	.006
Emotional self-awareness	3.140	.014
Optimism	2.944	.020
Assertiveness	2.91	.021
Intrapersonal	2.409	.048

Cluster Analysis and Regression Analysis

A cluster analysis identified three distinct leadership groups: high, middle, and low transformational leadership clusters**.** Leaders in the high-transformational cluster exhibited

significantly higher emotional intelligence scores across all components. Exhibit 8 illustrates the cluster membership distribution.

Exhibit 8. Cluster membership by transformational leadership
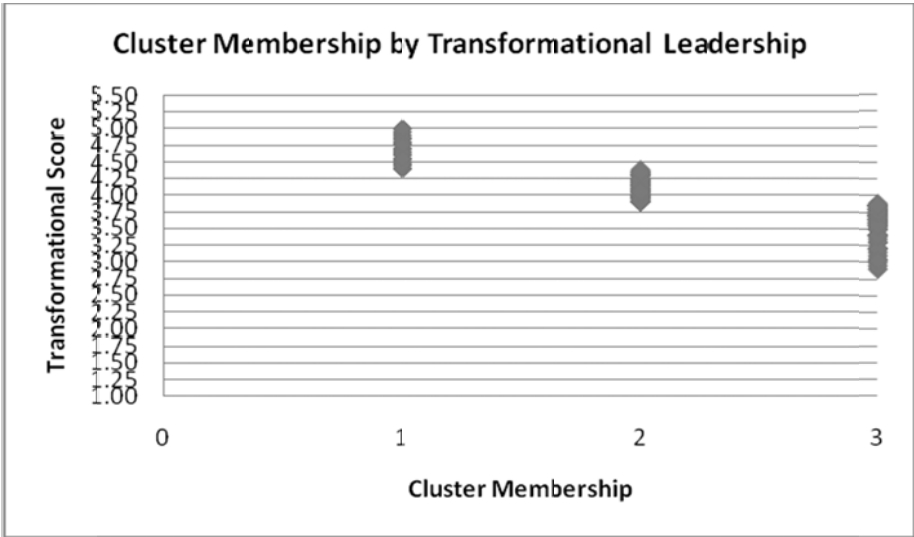
Multivariate Statistical Methods

A discriminant analysis was performed to further analyze the relationship between emotional intelligence and leadership behaviors. This method identified key emotional intelligence subcomponents—self-actualization, optimism, empathy, and total emotional intelligence—as significant in differentiating between transformational leadership clusters. Exhibit 9 provides the canonical discriminant function results, showing the relative weight of each variable.

Exhibit 9. Canonical discriminant functions
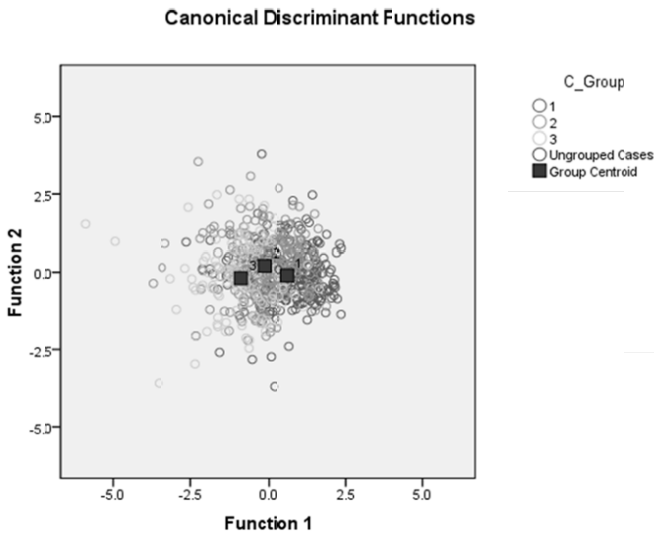
Regression Analysis

Regression analysis confirmed a significant relationship between emotional intelligence and transformational leadership, with total emotional intelligence explaining 19% of the variance in transformational leadership behaviors. The stepwise multiple regression model identified interpersonal, optimism, self-actualization, and general Mood as the most significant contributors

to transformational leadership effectiveness. Exhibit 10 presents the regression equation and variance analysis.

Exhibit 10. Total emotional intelligence versus transformational behaviors with regression equations and variance

Total EQ vs. Transformational Leadership

$y = 0.0137x + 2.8398$
$R^2 = 0.1575$

Linear (Series1)
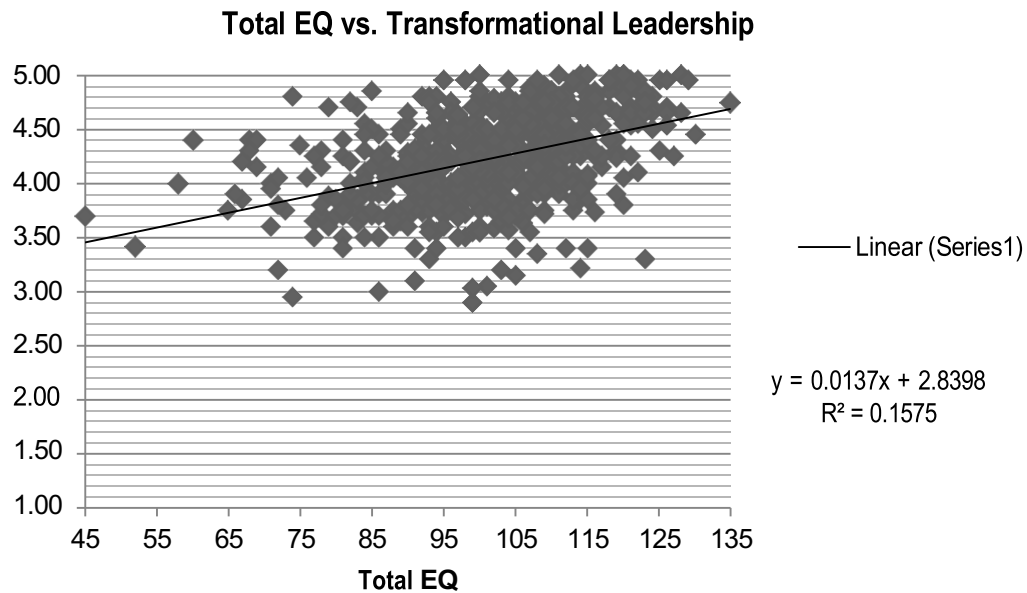
Exhibit 11. Regression analysis results for emotional intelligence versus transformational leadership

Emotional intelligence variables	R	R^2
Total emotional intelligence	0.438	.0192
Five emotional intelligence components		
Interpersonal	0.447	.0200
Interpersonal, intrapersonal	0.480	.0230
Fifteen emotional intelligence subcomponents		
Interpersonal	0.447	.0200
Interpersonal, optimism	0.504	0.254
Interpersonal, optimism, self-actualization	0.515	0.265
Interpersonal, optimism, self-actualization, general Mood	0.532	0.282
Interpersonal, optimism, self-actualization, general Mood, happiness	0.559	0.313
Interpersonal, optimism, self-actualization, general Mood, happiness, reality testing	0.573	0.328
Interpersonal, optimism, self-actualization, general Mood, happiness, reality testing, adaptability	0.577	.0333
Interpersonal, optimism, self-actualization, general Mood, happiness, reality testing, adaptability, impulse control	0.582	0.338

Theoretical and Practical Implications of the Study

This study's findings have significant implications for both theory and practice, particularly in the domains of corporate sustainability, leadership development, mentoring, and coaching.

Emotional Intelligence and Corporate Sustainability

The study also explored how emotional intelligence contributes to corporate sustainability initiatives. Respondents who scored higher in emotional intelligence were more likely to:
• Implement long-term sustainability strategies within their organizations.
• Foster collaborative decision-making processes for environmental and social responsibility.

- Lead projects that align with corporate social responsibility (CSR) goals.

Theoretical Implications

This study contributes to leadership theory by demonstrating that emotional intelligence is critical in transformational leadership development. It supports the existing literature by providing empirical evidence that EI enhances key leadership behaviors, including inspirational motivation and individualized consideration (Bass & Riggio, 2018). Furthermore, the study advances corporate sustainability theory by directly linking EI-driven transformational leadership and sustainable business practices (Elkington, 2019).

Practical Implications

These findings highlight the need for organizations to integrate emotional intelligence training in leadership development programs. The data demonstrate that emotionally intelligent transformational leaders are better equipped to implement sustainable business practices, ensuring long-term corporate viability and ethical decision-making.

Companies that focus on EI development can enhance their leaders' ability to:
- Manage stakeholder relationships effectively.
- Navigate sustainability challenges with agility.
- Drive ethical and socially responsible corporate behaviors.

Organizations seeking to enhance corporate sustainability should integrate emotional intelligence training into leadership development programs. These findings underscore that cultivating emotional intelligence in leadership is essential for fostering a sustainable corporate environment and achieving long-term organizational success.

Developing leaders with strong EI skills can lead to:
- Improved stakeholder engagement in sustainability initiatives.
- More extraordinary ability to navigate ethical challenges in corporate governance.
- More effective leadership in implementing sustainable business strategies.

Mentoring and Coaching Applications

The study's findings also highlight the importance of mentoring and coaching programs to develop emotionally intelligent leaders. Organizations can:
- Implement EI-based coaching frameworks to strengthen transformational leadership.
- Establish mentorship programs encouraging experienced leaders to cultivate EI skills among emerging managers.
- Foster a continuous learning and adaptability culture that aligns with long-term sustainability objectives.

Conclusion

This study provides empirical evidence that emotional intelligence is a crucial determinant of transformational leadership and significantly advances corporate sustainability. The findings confirm that emotionally intelligent leaders are better equipped to inspire, motivate, and engage employees while integrating sustainable practices into organizational strategies. The strong correlation between emotional intelligence and transformational leadership underscores the need for organizations to invest in leadership development programs that emphasize emotional competencies (Goleman, 2017; Bass & Riggio, 2018).

Theoretically, this study contributes to the growing knowledge of leadership and sustainability by demonstrating that transformational leadership, when supported by emotional intelligence, fosters sustainable corporate behavior. This supports existing leadership theories, including the transformational leadership model (Bass, 1985) and

emotional intelligence frameworks (Salovey & Mayer, 1990; Bar-On, 1997), by validating their impact on corporate sustainability outcomes.

Practically, the study highlights the necessity of integrating emotional intelligence training into leadership development initiatives. Organizations prioritizing emotional intelligence development are likelier to cultivate leaders who can drive ethical, sustainable, and socially responsible business strategies (Haque et al., 2021). Furthermore, by fostering a culture of continuous learning and adaptability, companies can enhance corporate sustainability performance and long-term resilience (Elkington, 2019).

The study also underscores the importance of mentoring and coaching programs in fostering emotional intelligence among leaders. Structured mentoring initiatives incorporating emotional intelligence training can empower emerging leaders to develop strong interpersonal skills, navigate workplace challenges effectively, and promote sustainability-driven decision-making (D'Amato & Roome, 2022).

Future research should explore the long-term effects of emotional intelligence on leadership outcomes in different industries and cultural contexts. Additionally, longitudinal studies can provide deeper insights into how emotional intelligence and transformational leadership evolve and influence corporate sustainability practices in the long run.

By integrating emotional intelligence, transformational leadership, and corporate sustainability, organizations can achieve a competitive advantage, enhance employee engagement, and contribute meaningfully to global sustainability efforts. Leaders who develop emotional intelligence strengthen organizational performance and create positive societal impacts, reinforcing the importance of ethical and sustainable business practices.

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Focus of Risk Management

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Abstract: In the contemporary literature and empirical investigation of risk, a clear distinction between risk that is controllable and risk that is out of the range of control for the individual is missing. This paper proposes the idea of a focus on risk management based on the distinction into risks one can control and risks one cannot control. Making this distinction has become essential in light of the constant bombardment with news on social online media. Overall, risks one cannot control may add a layer of complexity and emotional impact to our lives, which may drain cognitive capacity and confidence in control. An overly focus on uncontrollable risks may create negative emotionality and leave the individual with feelings of helplessness and fear. On the contrary, a clear focus on risks one can control may not only help in navigating through life more efficiently. It may also breed feelings of self-confidence and positive affirmation through control and positive outcomes. The paper discusses intervention strategies to avert a blurred or overly focus on uncontrollable risks as a way to enhance productivity and efficiency but also emotional wellbeing of the individual, the family, social groups and society. The discussion also highlights boundary conditions where focus on uncontrollable risks is needed when it comes to long-term intergenerational care.

Keywords: Control, Costs and Benefits, Emotions, Law & Economics, Risk, Risk Management, Uncertainty

Introduction

Risk management is the "systemic process of identifying, assessing, and mitigating threats or uncertainties" (Gibson, 2023). Risk management usually entails analyzing risk factors and the likelihood of their occurrence and impact. Overall, risk management aims at minimizing harm and monitoring effectiveness of measures (Gibson, 2023).

In risk management, a distinction is made between risk and uncertainty. Risk refers to a situation where outcome probabilities can be estimated. Chances of gains and losses propensities over time become the center of attention in risk management. The estimates are derived from historical data and models that make risk measurable in order to derive inferences how to manage risk. Uncertainty refers to situation where outcome probabilities are not known and unpredictable. Lack of information and trying to estimate the likelihood for uncertainty to be turned into risk estimates with clear probability outcomes lies at the core of risk management.

This paper addresses another dimension of coping with risk. It concerns a locus of control angle in risk and suggests that risk can be divided into controllable and uncontrollable risk. Making the distinction about control of risk upfront before measuring and estimating likelihoods of trajectories and outcomes may save cognitive load and emotional distress of uncertainty and feelings of helplessness. Containing emotions arising from framework conditions one cannot change may grant mental space and cognitive capacity to focus on those things one has the possibility to master. The extra boost in calmness and mental focus is thereby meant to allow for better decision making and choice patterns.

This article is structured as follows: First, risk and risk management will be covered. Second, the idea of a locus of control in risk assessment will be introduced. Third, three examples will be given how risk may become the focal point of analysis. Forth, the discussion covers the advantages of a distinction of risk into controllable and uncontrollable

risks in order to then also show boundary conditions what aspects should still be considered even if the primary focus is set on controllable risk.

Risk management

Risk management draws from business studies and organizational decision-making theory. The aim of risk management is to control risks that impact human life. Minimizing risks improves people's lives by less harm and destruction to their daily activities. Fundamental principles of risk management include processes of risk identification, assessment and quantification of potential harm, risk mitigation and constant monitoring for adjustment needs to emerging risks. Risk management benefits from a structured approach to enhance organizational resilience and regulatory compliance. Risk mitigation techniques are relevant for all facets of human life.

For risk assessment the identification of potential changes and estimated outcomes is essential for ensuring resilience and strategic goals (Aven, 2015). Risks are thereby assessed in terms of their likelihood and potential impact. In the systematic evaluation of risk, cognitive complex decision making is tainted with emotional facets, such as joy in mastery but also fear of failure, for instance. Scientific accounts of risk assessment combine quantitative methods – such as probability analysis – with qualitative accounts of expert judgement but also emotional impact analyses (Kaplan & Garrick, 1981). Identifying likelihood and impact of risk but also the prioritization and organization of risk mitigation strategies is a cognitive and emotional task.

Identifying risks requires comprehensive understanding of the environment and personal capabilities to change the environment or adapt (ISO, 2018). While there is a long history in risk management theory and practice with multiple techniques – such as brainstorming, interviews, scenario analysis but also microeconomic decision making as well as macroeconomic modelling – we lack a distinction between risks that one can control and risks one cannot control. Making this distinction would allow cognitive energy and decision-making capacities as well as help conserve and bundle resources for those risk variances one can change.

Risk mitigation entails strategies to manage risks which entails, for instance, risk avoidance, reduction, transfer and acceptance (Hillson, 2009). Controls and contingency plans as well as resilience strategies or risk transfers via insurance are potential ways to mitigate and adapt to risk.

Risk monitoring allows for constant adaptation based on risk levels and changing conditions. It includes proactive and timely cognitive processes of reviewing the environment and adjusting to changed conditions (Aven, 2015).

Locus of control in risk management

The locus of control theory originated from Julian B. Rotter in 1954. This psychological concept describes how individuals perceive control over outcomes of their actions over their lives. There is an internal locus of control, in which individuals tend to believe that they are the masters of their own actions and outcomes. The internal locus of control is contrasted by the external locus of control, by which individuals attribute outcomes as a function of external forces, such as luck, fate and actions of others. Control theory inspired psychology and decision sciences by examining people's motivation based on their locus of control propensities.

Interestingly, the locus of control theory has not been applied in risk management in the sense to distinguish between risk that people can have under control by their own actions (internal locus of control risk) and risk that they cannot control (external locus of control risk). In the case of internal locus of control innovatively applied on risk management, people focus on risk they can control, while abandoning major consideration and emotional engagement with risk they have no control over. This strategy is arguably meant to enhance efficiency but also emotional wellbeing. All these beliefs significantly impact on how

individuals approach challenges, make decisions, and interpret their environments. The locus of control has since become a cornerstone of psychological research, with broad applications in various fields, particularly in the decision sciences.

Unlike Rotter's (1954) assumption that people differ in their propensity to either have an internal or external locus of control which determines their beliefs about whether they can change the course of actions (internal control) or are dependent on external forces (external control); the idea of the internal or external risk focus advocates for a situation change of focus on internal risk that can be controlled and disengagement and abandonment of external risk that cannot be controlled. This newly-proposed angle of risk management allows shaping human behavior towards risk control while abandoning negative consequences of insurmountable external risks. While the original locus of control theory was used to understand motivation, decision making and coping strategies, the application of locus of risk control allows for bundling self-efficacy, persistence and achievement by focusing on internal locus of risk control (Rotter 1966), while reducing stress and helplessness moments by zoning out those external locus of risk control moments that are completely out of control for the individual.

Initial research on the locus of control showed that internal locus leads to higher self-esteem, motivation and goal achievement (Spector, 1988). Internal locus of control is more likely to be associated with proactive behavior and responsibility for decisions (Spector, 1988). External locus of control is more aligned with passive behavior, less goal orientation and more inclined to failures to external factors (Lefcourt, 1982). Applying these insights to risk management, one could extrapolate that primary focus on internal locus of risk control may drive people to more and better targeted action, while neglecting focus on external locus of risk control may help decrease emotional moments of helplessness, lethargy and depression due to a no-way-out perception.

One of the most significant applications of the locus of control theory is its impact on decision-making. Individuals with an internal locus of control are more likely to engage in active decision-making processes, where they consider alternatives, anticipate consequences, and take responsibility for their choices. Conversely, individuals with an external locus of control may defer decision-making to external agents, such as authority figures, or may make decisions based on chance or external guidance, believing they have limited control over the outcome (Buchanan & Seligman, 2007).

Locus of control also influences how individuals assess risk and uncertainty. Research in decision sciences has found that those with an internal locus of control tend to be more confident in their ability to handle uncertainty and are more likely to take calculated risks (Stewart et al., 2003). On the other hand, individuals with an external locus of control may avoid risky decisions or become overly cautious, as they believe that external forces rather than their actions determine the outcome (Vroom, 1964).

Moreover, the locus of control plays a significant role in how individuals process information. Internally-oriented individuals are more likely to seek information actively and to engage in critical thinking when making decisions, whereas those with an external locus of control may rely more on external cues, such as advice from others or societal norms, when faced with uncertainty (Phares, 1976).

In organizational settings, employees with an internal locus of control are more likely to demonstrate higher levels of job satisfaction, commitment, and performance. These individuals believe their actions and decisions contribute significantly to organizational outcomes and are more motivated to work toward organizational goals (Judge et al., 2001). Conversely, employees with an external locus of control may feel less empowered, exhibit lower job satisfaction, and experience greater levels of stress due to their perception that outcomes are largely influenced by external forces such as management decisions or workplace conditions (Spector, 1988).

Taken together and applied on risk control, if focusing on internal risk locus of control targeting those risks one can influence may lead to action and self-motivated reduction of risk while reducing all the cognitive load and negative emotions uncontrollable situations arise.

Cases

When finding cases to describe the internal and external locus of risk control, one case concerns social online media infiltrating users with negative content that aggravates but cannot be changed directly. For instance, the social online media platform X, formerly known as Twitter, is believed to increase negative emotions by featuring dissenting views than one's own in order to engage users into active discussion. Further, TikTok has been said to use emotionally disturbing videos in order to keep users longer on the platform. Now applying a focus on internal locus of risk control, one could argue to control consumption of social online media platforms – e.g., via regulation for age or self-restraint – in order to not be infiltrated with information one cannot control – e.g., videos about war abroad or historical facts that cannot be changed anymore.

Another case of using the internal locus of risk control logic while shrinking attention to external locus of risk control concerns time dimensions. Past experiences that cannot be changed anymore should thereby be viewed as external locus of risk control, while near future events should be seen as internal locus of risk control, on which one should focus their energy. This underlines the present bias that states that the now is most of the time considered as the most important focus. Too far away loci, like in the next generation, can only slightly be changed or put on a right trajectory, which explains oftentimes the lethargy on long-term risks, such as climate change.

Another way to dissect the internal locus of risk control is to integrate various contexts and derive general inferences. For instance, domains like food and drug intake are internal risk locus of control, while natural disasters and weather conditions are external locus of risk control domains. Assigning diversification strategies (e.g., packing sunscreen and an umbrella when one does not know how the weather will be like) but also finding pieces of influence on external locus of risk control decisions (such as personal financial allocation decisions if there is a trade war in two countries one cannot change) in the otherwise non-changeable context are thereby found as creative coping strategies with a complex world (Wallston et al., 1983).

Discussion

Risk management is a way to improve lives by foresighted estimation of risk and mitigation of anticipated risk. Risk management is applied in many domains and industries across a wide range of sectors. Risk management is a forward-looking anticipation of events and a backwards-looking learning to cope with life in the future. Risk management heightens personal resilience and crisis management in organizations and society. Risk management is an integral part of human living, ensuring that potential threats are identified, assessed, and mitigated effectively. A structured approach to risk management enhances an organization's ability to navigate uncertainty and safeguard its resources.

Contemporary developments in risk management enhance data analytics, artificial intelligence, and machine learning techniques to predict and manage complex risks in real time. As risks continue to evolve, especially with the increasing influence of technology and global challenges, organizations must adopt flexible and proactive risk management strategies to stay resilient in a changing environment. By embracing innovative tools and continuously refining risk management practices, organizations can mitigate adverse events and continue to thrive.

The locus of control theory offers valuable insights into human behavior and decision-making. By distinguishing between internal and external locus of control, the theory provides a framework for understanding individual differences in motivation, risk-taking, and coping

strategies. In educational, health, and organizational settings, fostering an internal locus of control can lead to better outcomes by enhancing personal responsibility, goal-setting, and proactive behavior. Future research should continue to explore the dynamic relationship between locus of control, decision-making, and individual behavior, with a focus on how to intervene effectively in various contexts to improve decision outcomes.

Risk management enhanced for locus of control aspects was introduced in the idea of a locus of internal or external risk control. To focus on internal locus of risk control onto those aspects of life one can influence was proposed as a way to boost efficiency but also to maintain a healthy emotional state. While some risk is inevitable, the ability to identify and mitigate parts of it and ignore those aspects that cannot be influenced is vital to improve risk management and benefit personal as well as corporate and societal causes.

Future research should address boundary conditions of the efficiency to focus away from far-distant external risks that are not changeable. For instance, the risk of climate change to future generations may appear far away and inevitable – yet the solution to a trajectory that holds the climate at least constant is set in the current generation. These intergenerational responsibility demands underline the importance of also integrating future conditions and fairness notions in the proposed risk control framework.

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Preparing for Conflict and War –
The Continuing Need

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Abstract: The relevance of integrating preparation for conflict and war in high school and university programs is given by the geopolitical context of Romania and Moldova. This region is marked by tensions and risks generated by nearby conflicts, especially the war in Ukraine, as well as its strategic position between two great spheres of influence: the West, represented by NATO and the European Union, and the Russian Federation. These circumstances underline the importance of an educated population in the field of security and conflict management, making the research topic highly relevant. The growing tensions around Romania and the Republic of Moldova underline the imperative to equip young people with essential knowledge and skills to navigate potential conflict situations. Education systems play a critical role in fostering resilience, critical thinking and preparedness among young people. Incorporating modules that address conflict awareness and disaster response strategies is not only timely, but essential for student safety and well-being. In the research context described, it proposes to explore the importance and impact of such an educational model, highlighting ways in which it can support the development of social, cognitive and civic skills of young people.

Keywords: Conflict, War, Education and Training, Emotional Resilience, Crisis Management

Introduction

The war launched by the Russian Federation against Ukraine in February 2022 represents the most significant conflict in Europe since World War II. For Romania and Moldova, the geographical proximity of this conflict has direct implications. Romania, having an extensive border with Ukraine in the northeast, has been exposed to massive flows of refugees, to logistical and humanitarian challenges, but also to the increase in military tensions in the Black Sea region. Also, Moldova, located only a few kilometers from the epicenter of the conflict, faced socio-economic pressures and risks of internal destabilization, especially in the context of the separatist region of Transnistria, supported by Russia.

In this framework, conflict and war education becomes crucial. Understanding geopolitical mechanisms and response strategies can increase population resilience to crises, reducing social and economic vulnerabilities. The approach of geopolitical conflicts requires young people to understand the complexity of such situations, to be prepared to respond and manage them appropriately in case of need. Educational institutions have a responsibility to provide students and pupils with the necessary tools to understand and address these challenges, thereby enhancing individual and community resilience.

Romania is a key member of NATO and the EU, having an essential role in strengthening security on the Eastern Flank. International military bases, joint exercises and the presence of allied troops on its territory underline the importance of this state in the European defense architecture. However, these measures must be complemented with an appropriate education that prepares future generations to understand the complexity of international conflicts and actively contribute to the strengthening of national security. On the other hand, the energy and economic challenges generated by the conflict in Ukraine highlighted the need for well-informed policies based on a deep understanding of the geopolitical context. By integrating learning about conflicts in the educational system, young Romanians could become better prepared to endure and manage such crises.

The Republic of Moldova, although declared a neutral state by the constitution, is in an extremely vulnerable position. Pro-Russian influences, propaganda, and energy dependence

on Gazprom contribute to constant instability. In addition, the pro-European orientation of the Moldovan government faces resistance from both domestic pro-Russian forces and Moscow's external influence.

Research methods and tools

The methodology used in research on the introduction of conflict and war education into high school and university education is mixed. I mainly used the following:

The comparative study on models from other countries: Israel and Asian states in education for conflict and war—South Korea, Singapore—on the analysis of educational programs in countries that include such modules with the identification of lessons learned that can be adapted for the context of Romania and of the Republic of Moldova and the cultural and social differences, obstacles and opportunities identified in Romania and the Republic of Moldova;

Surveys and interviews consisting of the opinions of students, teachers and experts in the field of education and security, resulting from a questionnaire applied both to high school and university students and to Romanian teachers.

Documentary analysis materialized in the study of national security strategies and relevant educational policies in Romania and the Republic of Moldova.

Subsequently, the *methods of analysis and synthesis* were used to summarize the centralized material and formulate conclusions based on them.

These methods and tools used in the scientific approach allowed me a comprehensive understanding of the transformations in the field of education, leading me to formulate relevant conclusions for the future

The importance of education for conflict and war

In this context, preparing the population to understand the risks associated with conflicts, but also to respond to propaganda and political crises, becomes a priority. High school and university education can provide young Romanians and Moldovans with the necessary tools to develop national resilience, thus supporting European integration. The purpose of the proposed model is to create a link between theoretical knowledge and practical applicability, preparing young people to respond rationally to situations of uncertainty by developing the ability to make decisions under pressure, to understand global dynamics to identify useful lessons, to promote peace and cooperation through proper management of tensions and to promote negotiated solutions in various situations.

Looking at the social lessons of history and the importance of education, we determine that both Romania and Moldova share a complex history, shaped by territorial conflicts, wars and political changes dictated by the great powers. From Ottoman and Austro-Hungarian to Soviet influences, these countries witnessed episodes that deeply marked national identity and social structure. Education about conflict and war can contribute to a better understanding of these historical lessons, strengthening a culture of peace and collaboration. In addition, international examples such as Israel or the Scandinavian countries show that preparing the population for conflict management not only improves national resilience, but also promotes social cohesion.

Seen from another perspective, the International Federation of Red Cross Societies (IFRCS) defines disasters as any unforeseen event that leads to dysfunction in society that leads to economic, social, property and human losses up to an extreme limit, limit to that society can no longer cope with the adverse effects (IFRC, 2022). The extent, frequency and type of hazards differ by geography, ethnicity and economic capacity (Sawalha, Shamieh & Meaton, 2018).

Floods, earthquakes, heat waves and droughts are some examples of natural disasters. However, occupational hazards, infectious disease outbreaks, terrorist attacks and others are

man-made disasters. Disasters cause extremely damaging effects. First, they increase the mortality rate because they cause massive injuries, such as blunt trauma and crush injuries. In 2017, the global database recorded 335 natural disasters worldwide, affecting more than 95.6 million people. Of these, 9,697 died, of which 58% were from Asia, costing an estimated US$335 billion in property damage. Second, they destroy property and cause disruption to economic and social infrastructure. Finally, they have a negative impact on people's physical, mental and social well-being (Centre for Research and Epidemiology Disasters, 2017).

In recent years, the influx of Ukrainian teenagers has revealed challenges in integrating refugee students into the education system, particularly in terms of language barriers and social isolation. This situation highlights the need for educational programs that address the psychosocial aspects of conflict, preparing students to support peers in conflict zones and promoting an inclusive environment.

Educational models from Israel, South Korea, and Singapore regarding conflict and war education were studied for more in-depth documentation. The conclusions are that Israel presents a realistic and practical approach that is useful in preparing students for crises, especially through simulations and extracurricular programs, South Korea has an educational system that can inspire the introduction of mandatory courses in civil defense and situation management emergency and Singapore's model of education for peace and the promotion of social cohesion is particularly relevant for regions with cultural diversity or political polarization.

The integration of elements from these models in the curricula of Romania and Moldova could significantly contribute to the preparation of young people for contemporary uncertainties and risks.

Introducing conflict and war preparedness into the curriculum

In order to meet these needs, we believe that minimal components can be integrated into the high school and university curriculum can be integrated into the high school and university curriculum, so as to lead to the creation of specific skills that initiate and develop *conflict awareness and analysis* by educating pupils/students about historical contexts and geopolitics of regional conflicts in order to promote a comprehensive understanding of the field. We also believe that training for emergency or conflict response by providing *practical skills for personal safety, first aid and crisis management in conflict situations* is another area that requires the introduction of theoretical and practical subjects in the curriculum of students in our high schools and universities. We add to these, the implementation of programs that improve *emotional resilience, stress management and human support mechanisms.* Considering that the society in Romania and the Republic of Moldova went through various computer attacks in 2024, on the occasion of the presidential elections held in both countries, we believe that the development of the *ability to critically evaluate information sources in order to combat disinformation and propaganda* during conflicts is a fourth direction in which high school students and/or college students must be prepared.

We expect that the integration of these components will lead to equipping pupils and students with the necessary skills and knowledge with the skills and knowledge needed to respond effectively to conflict situations, strengthening young people's ability to cope with the stress and uncertainty associated with conflict, and promoting an inclusive school environment that supports all students, including those affected by regional conflicts.

By integrating conflict preparedness into the curriculum, universities can aim to *increase national resilience* by creating a workforce capable of responding effectively to crises, supporting lifelong learning by creating a culture of security and continuous learning and adaptability ever-changing geopolitics as well as *addressing crises by integrating various fields* - psychology, public policy, communication and technology.

Resilience refers to an individual's ability to adapt, recover and thrive in the face of adversity, stress or trauma. It is not an innate trait, but a dynamic process that can be developed and strengthened over time. The result of this process is that resilient people maintain a positive outlook, use resources effectively, and continue to function despite challenges.

According to the definition provided by the American Psychological Association (APA), *coping mechanisms* are the cognitive, behavioral and emotional strategies that people use to manage stress and cope with difficult or threatening situations. These mechanisms are essential for maintaining psychological balance and functioning effectively under conditions of adversity. These mechanisms can be classified as adaptive (positive) consisting of healthy and constructive strategies or maladaptive (negative) that support problem solving and stress reduction, depending on their effectiveness in promoting long-term well-being. The importance of developing effective coping mechanisms derives from the social outcomes of stress management awareness and training. The main results are related to increasing psychological resilience, improving mental and physical health, and reducing the risk of burnout or other stress-related conditions. We propose here the study of coping mechanisms in the university area within the disciplines intended to strengthen social resilience.

In the context of education, fostering resilience and effective coping mechanisms among students and teachers helps improve emotional well-being, academic performance, and build a supportive school culture that thrives under stress or crisis. Incorporating these elements into the curriculum or training programs ensures that individuals are better prepared to face life's challenges with strength and adaptability.

In order to substantiate the proposal to introduce conflict and war education into the school and university curriculum, a questionnaire was drawn up with the question *"How important do you think it is to learn about security, defense and global and regional conflicts in high school or university education?"* and applied to a number of 95 high school students and students of the legal and economic fields. Analyzing the answers to the question regarding the importance of studying security, defense and conflicts in high school and university education, we observe the following distribution: very important – 48 respondents, important – 34 respondents and sufficiently important – 13 respondents. The interpretation of these results leads to the following conclusions:

1. *There is a high share of favorable answers* - 82 out of 95 respondents (approx. 86%) consider these disciplines to be "very important" or "important". This suggests an increased interest in integrating these subjects into the curriculum. A small number of people (13) consider these topics "important enough", which indicates a generally positive perception of the need for education in this area. This suggests a real awareness of global issues and a desire to better understand these critical themes;

2. *A high trend towards a recognition of the relevance of the field:* the majority of respondents (48) place the importance of these disciplines at the highest level ("very important"), which may suggest an increased awareness of the relevance of security and defense in the current global context and regional. A percentage of 20% of students consider the subject "important", which indicates that part of the respondents recognize an acute need for education in this field, perhaps because of the current international context or personal interests towards global policies;

3. *Possible Implications for Educational Curriculum:* These results support the case for introducing or strengthening security and defense subjects in high school and university education. The acceptance of such an initiative seems to be quite high, which could facilitate the integration of these subjects without significant resistance from pupils/students.

The results indicate a clear support for the inclusion of Security and conflict topics in high school and university education. The data suggest a perceived need to deepen these subjects, which may justify the initiation of curricular changes in this direction.

At the same time, a questionnaire was built with the question, "Do you consider that education for defense, conflict and war can contribute to the prevention of extremism and radicalization among young people?" This question was answered by 75 teaching staff from high schools and universities. The analysis of the responses revealed the following distribution: 69 respondents answered "yes," while 6 respondents answered "no." The interpretation of the answers brings the following conclusions:

1. *There is a majority agreement on the positive impact of education* - 69 out of 75 teachers (92%) believe that education on these topics can have a preventive role in combating extremism and radicalization. This high percentage indicates a strong belief in the potential of education to form critical thinking and reduce the vulnerability of young people to extremist ideologies;

2. *Skeptical minority* - only 6 teachers (8%) do not believe that these subjects can have a significant impact on the prevention of extremism. This may reflect either a perception that radicalization is influenced more by social and economic factors than education, or a doubt about the effectiveness of implementing such courses;

3. *Implications for the educational system* - the majority acceptance of this idea can constitute a strong argument for the introduction of subjects or modules on security, conflict and defense in the curriculum. If teachers believe that such courses can contribute to reducing extremism, they may be better integrated and supported at the institutional level.

For a clearer picture, we also add a graphical representation of the percentage results for both questions. On the left, the graph shows the students' perception of the importance of education about security and conflicts, and on the right, the teachers' opinion about the role of education in preventing extremism.
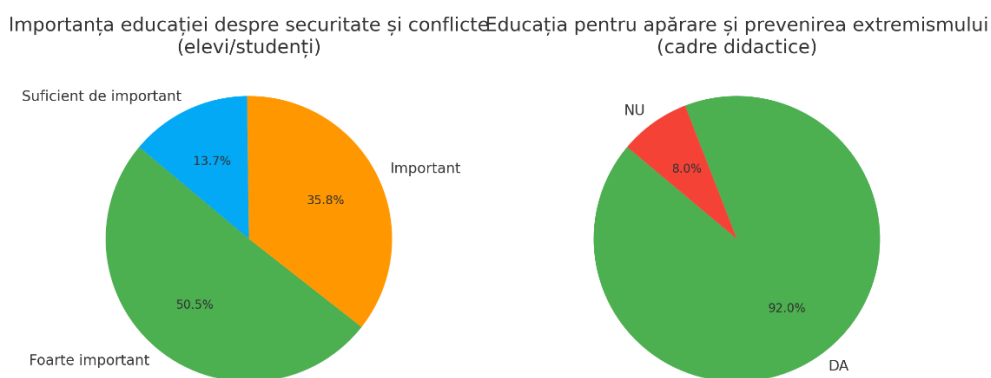
Figure 1. The importance of education about security and conflicts / The role of education in preventing extremism

In conclusion, we can consider that the answers indicate a clear perception of the role of education in preventing extremism and radicalization. Teaching staff, being essential factors in the implementation of such disciplines, show a favorable attitude, which suggests that a curricular initiative in this field could have support and a positive impact on the training of young people.

Conclusions

We believe that integrating conflict and war training into high school education programs is a proactive measure that addresses the current security challenges facing Romania and the Republic

of Moldova. Drawing on international research and best practices, this initiative aims to equip students with the skills and knowledge to navigate and respond to potential conflicts effectively.

The increasing frequency of geopolitical crises, natural disasters and conflicts calls for the development of well-informed and prepared citizens. While basic training in conflict and war awareness and response as well as emergency response can be introduced in high school, universities have a unique role in deepening these skills. By integrating specialist disciplines into higher education, we ensure that future professionals and leaders are equipped with the advanced knowledge and practical skills needed to manage complex geopolitical crises and contribute to national economic and social resilience.

The models from Israel, South Korea and Singapore offer valuable lessons that can be adapted for the context of Romania and the Republic of Moldova.

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The Role of Project Management Principles in Supporting Sustainable Organizational Initiatives

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Abstract: This study investigates how project management principles support sustainable organizational initiatives by integrating environmental, social, and economic objectives into traditional frameworks. Using a systematic meta-analysis of 30 peer-reviewed articles from 2019 to 2024, the research examines how established theories, including the PMBOK framework, Triple Constraint Theory, and Triple Bottom Line Theory, are adapted to meet the unique needs of sustainability projects. Critical success factors such as stakeholder engagement, leadership commitment, and dynamic organizational capabilities are identified as vital for achieving sustainability outcomes. Integration patterns include extending project lifecycles, embedding sustainability metrics into performance evaluations, and fostering cross-disciplinary collaboration to align sustainability goals with project objectives. Key findings indicate that organizations adopting integrated project management methodologies experience higher success rates in sustainability initiatives, demonstrated by improved environmental performance, enhanced social impact, and increased organizational resilience. The study emphasizes the importance of adaptive practices in addressing sustainability projects' iterative and long-term nature. The research offers theoretical advancements by providing an integrated framework for understanding the intersection of project management and sustainability and practical insights for enhancing stakeholder engagement, resource allocation, and performance measurement. The study also highlights the need for standardized sustainability metrics and specialized training programs for project managers. It addresses current research gaps by proposing future directions, including longitudinal studies to evaluate long-term impacts and cross-cultural analyses to explore regional variations in project management practices. This research contributes to the growing field of sustainable project management, offering a comprehensive roadmap for organizations aiming to achieve sustainable development goals through practical project-based approaches.

Keywords: Project Management, Sustainability, PMBOK, Social Impact, Organizational Risk Management, Triple Bottom Line.

JEL Codes: M19, Q56, L29, Q01, H43, O22, D81

Introduction

Integrating sustainability initiatives into organizational operations has become a critical priority in addressing growing environmental and social challenges. Businesses are increasingly called to adopt practices that drive economic growth and account for their broader impacts on society and the environment. The triple bottom line concept, encompassing economic, environmental, and social dimensions, has emerged as a guiding framework for balancing these imperatives. Project management principles, known for their structured approaches to planning, execution, and control, provide a vital mechanism for implementing sustainability initiatives effectively (Aridi et al., 2024). However, the complexity of sustainability projects necessitates adaptations to traditional project management methodologies to accommodate longer timelines, multifaceted stakeholder interactions, and the inclusion of triple-bottom-line objectives (Thompson & Lee, 2023).

Recent research emphasizes the transformative role of project management in advancing sustainability objectives. Williams and Brown (2022) highlight that organizations with well-structured project management frameworks are better equipped to balance diverse stakeholder expectations while addressing pressing environmental and social imperatives. These frameworks enable businesses to align operational goals with sustainability priorities, creating outcomes that align with the triple bottom line. Chawla et al. (2018) demonstrate that integrating sustainability principles into project management methodologies enhances project

success rates and delivers long-term benefits. Their research highlights the necessity of embedding sustainability as a core element of project management practices rather than treating it as an ancillary consideration. This integration ensures that sustainability is not merely an add-on but a fundamental driver of project strategy and execution, aligning operational goals with environmental and social priorities.

The increasing emphasis on sustainability has intensified the demand for adapting project management principles to achieve organizational objectives that reflect the triple bottom line. Martens and Carvalho (2014) argue that project management provides indispensable tools for the execution and monitoring of sustainability initiatives. These tools include structured stakeholder engagement, risk mitigation strategies, and performance measurement systems designed to address the unique complexities of sustainability projects. Integrating sustainability metrics into project planning and evaluation processes ensures that environmental and social goals are embedded alongside traditional economic outcomes. Shaukat et al. (2022) further highlight that effective project management practices enhance resource allocation, ensure adherence to project timelines, and enable precise measurement of sustainability outcomes. This alignment between management practices and sustainability objectives fosters the long-term success of initiatives and strengthens their contributions to organizational and societal goals. As sustainability becomes a cornerstone of contemporary organizational strategies, project management is essential in embedding triple-bottom-line principles into operations. By adapting traditional methodologies to address the complexities of sustainability projects, businesses can achieve outcomes that balance economic growth with environmental stewardship and social equity. These adaptations reflect a necessary paradigm shift, positioning sustainability as an integral element of project management processes. Organizations that embrace this integrated approach achieve their operational goals and contribute meaningfully to global efforts to address pressing environmental and social challenges.

Problem Statement

Sustainability has emerged as a critical organizational priority, yet aligning traditional project management methodologies with the unique requirements of sustainability initiatives remains a significant challenge. While organizations increasingly recognize the importance of integrating sustainability into their operations, adapting project management principles to the iterative, complex, and long-term nature of sustainability projects has proven difficult. This misalignment often impedes efforts to achieve meaningful sustainability outcomes while maintaining operational efficiency, creating a persistent barrier to progress.

Traditional project management frameworks, designed for finite projects with well-defined deliverables, often lack the flexibility to accommodate sustainability initiatives' dynamic and evolving nature. This rigidity complicates efforts to align project lifecycles, governance structures, and performance metrics with the long-term environmental and social goals central to sustainability. Moreover, balancing traditional constraints such as time, cost, and scope with sustainability requirements, including environmental impact, social responsibility, and long-term viability, remains a formidable challenge for organizations (Thompson & Lee, 2023). This disconnect often leads to fragmented efforts, suboptimal project delivery, and sustainability performance results.

Another significant issue lies in the limited empirical evidence and underdeveloped frameworks available to guide the integration of project management methodologies with sustainability objectives. While extensive bodies of knowledge support project management and sustainability, research at their intersection is sparse. This lack of clear strategies for harmonizing these domains leaves organizations without a cohesive approach to implementing sustainability initiatives. This oversight hinders organizations' ability to evaluate and improve their initiatives effectively, perpetuating inefficiencies and undermining their contributions to global sustainability goals.

The challenges of aligning traditional project management methodologies with sustainability requirements highlight the need for a paradigm shift in organizational practices. Addressing these barriers will require organizations to reimagine project management frameworks, integrating adaptive, iterative, and long-term approaches to support sustainability goals. Bridging the research gap in this domain is critical to providing organizations with the tools and strategies needed to harmonize project management and sustainability. Organizations can achieve meaningful and lasting progress in sustainability by adopting innovative frameworks and performance metrics that prioritize environmental and social outcomes alongside operational efficiency.

This research addresses these critical gaps by exploring how project management principles can be adapted to support sustainability initiatives effectively. Specifically, it examines:

1. How can traditional project management frameworks be transformed to accommodate the unique demands of sustainability initiatives?
2. What are the key success factors and best practices for integrating project management principles with sustainability objectives?

Purpose of the Inquiry

This inquiry explores how project management principles can be effectively adapted to meet the unique demands of sustainability initiatives, addressing critical gaps in research and practice at the intersection of project management and sustainability. While sustainability has emerged as a key organizational priority, the challenges of aligning traditional project management frameworks with the iterative, complex, and long-term nature of sustainability projects persist. This study examines how traditional methodologies can be transformed to accommodate extended planning horizons, adaptive control mechanisms, and iterative feedback loops while balancing the triple-bottom-line objectives of environmental impact, social responsibility, and economic viability. The research aims to develop actionable strategies integrating stakeholder engagement, dynamic capabilities, and innovative performance metrics into project management by identifying key success factors and best practices. Ultimately, this study provides organizations with the tools and frameworks to harmonize operational efficiency with long-term sustainability outcomes, contributing to theoretical, practical, and societal advancements in addressing global sustainability challenges.

Significance of the Study

This study is substantial from theoretical, practical, and societal perspectives. It offers valuable contributions to understanding and applying project management principles to support sustainable organizational initiatives. By bridging traditional project management frameworks and sustainability requirements, the findings provide actionable insights for organizations aiming to align environmental, social, and economic objectives with their operational goals.

Theoretically, this study advances knowledge of project management and sustainability. It proposes an integrated model for managing sustainability projects based on established frameworks such as the Project Management Body of Knowledge (PMBOK), Triple Constraint Theory, and Triple Bottom Line Theory. The research highlights the importance of stakeholder engagement, adaptive capabilities, and systems thinking as critical drivers of sustainable outcomes. The study demonstrates how these practices can enhance project efficiency and long-term impact on organizations by applying traditional project management methodologies to sustainability objectives. Furthermore, it addresses the need for standardized sustainability metrics that enable comprehensive evaluation of environmental, social, and economic performance.

The practical implications of this study are equally profound, offering organizations a framework for adapting project management principles to sustainability contexts. By

identifying critical success factors, such as leadership commitment, stakeholder engagement, and dynamic capabilities, the research provides actionable strategies to enhance project outcomes. The findings guide organizations in resource allocation, timeline management, and the integration of sustainability metrics, enabling them to better align their project goals with broader strategic objectives.

From a societal perspective, this study underscores the critical role of project management in addressing global sustainability challenges. As organizations increasingly embrace sustainability initiatives, effective project management practices can be pivotal in reducing environmental degradation, enhancing social equity, and fostering economic development. The research aligns closely with the United Nations Sustainable Development Goals (SDGs), particularly those related to climate action, responsible consumption, and inclusive growth. By providing a roadmap for integrating sustainability into project-based activities, the study supports organizations in achieving positive societal outcomes while maintaining operational efficiency, as emphasized by Thompson and Lee (2023). This contribution highlights the transformative potential of project management in creating a sustainable future.

Theoretical Frameworks

The theoretical frameworks for this study integrate several established theories that form the foundation for understanding how project management principles can effectively support sustainable initiatives. These theories provide a robust basis for analysing and adapting project management practices to meet sustainability objectives by addressing environmental, social, and economic dimensions alongside traditional project constraints.

Project Management Body of Knowledge (PMBOK) Framework

The PMBOK framework serves as the structural core of this study, offering a systematic approach to project management through its five process groups: initiating, planning, executing, monitoring, controlling, and closing (Aridi et al., 2024). These processes facilitate the adaptation of project management practices to align with sustainability objectives by incorporating environmental and social considerations into traditional constraints of scope, time, and cost. Thompson and Lee (2023) emphasize that applying PMBOK principles in sustainability ensures that project teams can balance operational efficiency with long-term environmental and social impacts. This structured methodology highlights the critical role of process-oriented approaches in achieving sustainability goals.

Triple Constraint Theory

Traditionally centered on balancing scope, time, and cost, the Triple Constraint Theory is reimagined in this study to include sustainability-related dimensions such as environmental impact, social responsibility, and long-term viability. Broadening the scope of this theory enables a more comprehensive evaluation of project success in sustainability contexts. By integrating these additional constraints, project managers can ensure that operational priorities do not overshadow sustainability objectives, fostering a more holistic approach to project execution and assessment.

Triple Bottom Line Theory

The study draws on the Triple Bottom Line (TBL) framework, introduced by John Elkington in 1994, to underscore the importance of balancing people, planet, and profit in project outcomes. This approach provides a conceptual foundation for evaluating sustainability alongside financial performance. By emphasizing the integration of environmental and social impacts into project planning and execution, the TBL framework addresses the increasing demand for projects to deliver measurable benefits across all three dimensions of sustainability. This balanced perspective is essential for aligning organizational objectives with broader global sustainability goals.

Stakeholder Theory

Stakeholder Theory, developed by R. Edward Freeman (1984, 2010), emphasizes the importance of managing diverse stakeholder interests in organizational decision-making. This theory posits that businesses function optimally and serve the greater good when considering the needs and concerns of all stakeholders – including employees, customers, suppliers, communities, and investors— rather than focusing solely on shareholders.

Engaging environmental and social stakeholders alongside traditional project stakeholders is critical for addressing complex sustainability challenges. Meaningful stakeholder engagement allows organizations to identify and prioritize issues that matter most to their stakeholders, ensuring that sustainability initiatives are relevant and effective. By involving a broad spectrum of stakeholders in sustainability efforts, organizations can foster collaboration, share resources, and exchange knowledge, leading to more comprehensive and successful sustainability outcomes.

Systems Theory

Systems Theory offers a dynamic perspective on the interconnected nature of project management and sustainability practices. By viewing these elements as interdependent systems, this study supports the development of strategies that harmonize operational and sustainability goals. Systems Theory allows for a holistic analysis of project management practices, emphasizing the integration of adaptive strategies that account for the complexities of sustainability. This approach fosters resilience and long-term success in managing sustainable initiatives (Burrell et al., 2021).

Dynamic Capabilities Theory

Dynamic Capabilities Theory underscores the importance of organizational adaptability in addressing evolving sustainability requirements. Teece et al. (1997) argue that fostering innovation, knowledge sharing, and flexibility within project teams enables organizations to respond effectively to operational and sustainability challenges. Their framework highlights organizations' need to sense opportunities, seize them efficiently, and continuously reconfigure resources to maintain a competitive advantage in a rapidly changing environment.

By integrating these theoretical perspectives, the study provides a comprehensive framework for understanding and implementing sustainability in project management. Each theory contributes unique insights that enhance both the academic and practical understanding of sustainable project management, offering valuable strategies for addressing the challenges of modern organizational sustainability initiatives.

Definition of Terms

Project Management Principles

Project management principles are the foundational guidelines that drive planning, organizing, controlling, and leading project activities to achieve specific objectives within defined constraints (Project Management Institute, 2023). These principles encompass traditional approaches for sustainability initiatives and incorporate methodologies tailored to meet environmental and social objectives. By adapting these principles, project management can address the complexities of sustainability while maintaining operational efficiency.

Project Management Methodology

A project management methodology consists of structured practices, techniques, and procedures that guide the execution of projects from initiation to closure (Aridi et al., 2024). These methodologies ensure that project goals are systematically planned and achieved through defined

phases. In sustainability-focused initiatives, methodologies are adapted to incorporate environmental and social considerations, ensuring project execution aligns with broader sustainability objectives (Thompson & Lee, 2023). This integration enables organizations to navigate traditional project constraints while addressing sustainability imperatives.

Project Life Cycle

The project life cycle encompasses the sequential phases of a project, from initiation to closure. In sustainability-focused projects, this cycle is often extended to include additional stages such as environmental impact assessments (EIAs) and ongoing monitoring of sustainability outcomes. Martens and Carvalho (2014) highlight that these extended stages ensure the incorporation of environmental and social considerations throughout the project's duration, reinforcing the alignment between sustainability goals and project activities.

Sustainable Organizational Initiatives

Sustainable organizational initiatives are intentional efforts designed to create long-term value by managing environmental, social, and economic risks and opportunities. These initiatives harmonize organizational growth with environmental stewardship and social responsibility, enabling organizations to achieve operational objectives while addressing global sustainability challenges.
Environmental Sustainability Metrics
Environmental sustainability metrics are critical tools for evaluating the impact of project activities on the environment. These metrics include carbon footprint, resource utilization, waste management, energy efficiency, and biodiversity impacts. Singh et al. (2012) argue that using these metrics allows organizations to assess their compliance with environmental standards and make informed decisions to enhance their sustainability performance.

Social Sustainability Indicators

Social sustainability indicators evaluate the societal impact of project activities by assessing factors such as stakeholder satisfaction, community engagement, and the delivery of social benefits. Colantonio (2009) highlights that these indicators provide valuable insights into the social dimensions of project outcomes, ensuring that projects contribute to equitable and inclusive development.

Sustainability Project Integration

Sustainability project integration involves merging traditional project management methodologies with sustainability requirements. This process results in comprehensive frameworks that address operational efficiency while achieving sustainability goals. Martens and Carvalho (2017) assert that successful integration relies on balancing traditional constraints with sustainability objectives, creating projects that deliver both short-term success and long-term value.

Stakeholder Engagement

Stakeholder engagement is a systematic process that involves identifying, analyzing, and involving stakeholders in project activities. This process includes environmental and social stakeholders for sustainability-focused projects, ensuring diverse perspectives are incorporated into decision-making. Freeman et al. (2010) emphasize that effective stakeholder engagement fosters collaboration and trust, essential for achieving sustainability objectives.

Performance Measurement Framework

A performance measurement framework evaluates project success by incorporating traditional metrics like time and cost and sustainability-specific indicators like environmental impact and social benefits. Epstein and Buhovac (2014) stress that such frameworks comprehensively assess project outcomes, enabling organizations to effectively balance operational goals with sustainability priorities.

Organizational Capability

Organizational capability refers to an organization's ability to adapt and respond to dynamic environments by managing project requirements and sustainability objectives. Teece et al. (1997) argue that fostering capabilities such as innovation and knowledge sharing enables organizations to address sustainability challenges while maintaining operational excellence.

Change Management

Change management involves transitioning individuals, teams, and organizations from their current practices to desired future states. In the context of sustainability, this process requires adopting sustainable practices and processes while preserving project efficiency and effectiveness. Kotter (1996) notes that effective change management is critical for embedding sustainability into organizational culture and operations.

Knowledge Management

Knowledge management involves creating, sharing, and utilizing knowledge within projects and organizations. This process includes traditional project knowledge and sustainability-specific expertise. Nonaka and Takeuchi (1995) highlight that effective knowledge management enhances decision-making and enables organizations to build on past successes to achieve sustainability objectives.

Value Creation

Value creation involves generating measurable benefits from project activities, including financial returns, operational improvements, and sustainability-oriented outcomes. Hart and Milstein (2003) underscore that integrating sustainability into project management amplifies value creation by delivering environmental and social advancements alongside traditional project benefits. This framework demonstrates how project management principles and practices can be adapted to support sustainability initiatives, offering theoretical insights and practical strategies for achieving environmental, social, and economic goals.

Method

The method was a meta-analysis literature review. The scope of this literature review was centered on the 12 principles outlined by the Project Management Institute (PMI), which served as the analytical framework for the meta-analysis.

The Project Management Institute (PMI) (2021) outlines the following 12 principles in the PMBOK® Guide – Seventh Edition, which reflect best practices and a modern approach to project management:

1. Act as a Responsible and Ethical Steward – Manage resources wisely while upholding ethical standards and promoting sustainable practices.

2. Foster a Unified and Collaborative Team – Cultivate trust, encourage teamwork, and support open dialogue to enhance problem-solving and collective success.
3. Engage Stakeholders with Purpose and Clarity – Build meaningful relationships and communicate effectively to align with stakeholders' goals and expectations.
4. Prioritize and Deliver Meaningful Value – Ensure outcomes align with strategic objectives, meeting organizational and stakeholder needs.
5. Understand and Manage System Interactions – Analyze and balance interdependencies to achieve cohesive, well-rounded project outcomes.
6. Exemplify Effective Leadership Qualities – Inspire and guide teams with adaptability, inclusiveness, and a shared vision to achieve project success.
7. Adapt Methods to Suit the Project's Needs—Tailor tools and approaches to each project's unique demands and conditions.
8. Embed Excellence in Processes and Outcomes – Ensure quality is integrated at every project stage to achieve superior results.
9. Confront and Manage Complexity with Confidence – Address multifaceted challenges proactively to minimize uncertainty and improve project outcomes.
10. Craft Strategic Responses to Risk – Anticipate and mitigate risks while capitalizing on opportunities to optimize results.
11. Adapt with Agility and Maintain Resilience – Remain flexible to evolving conditions and recover effectively from disruptions.
12. Facilitate Change for Future Success – Lead and manage transitions to align with the organization's vision and realize long-term benefits.

These principles focus on creating value, fostering collaboration, and enabling adaptability. They align with PMI's shift toward a more flexible, principles-based approach to project management and will be applied in this inquiry to sustainability development.

This study employs a systematic qualitative meta-analysis of 30 peer-reviewed journal articles and studies published between 2019 and 2024 to synthesize findings on the role of project management principles in supporting sustainable organizational initiatives. Meta-analysis is particularly well-suited for this research as it integrates diverse findings, providing a cohesive understanding of complex phenomena (Sandelowski & Barroso, 2007). The research process encompasses data collection and selection, analysis, and quality assurance to ensure the robustness of conclusions. Data collection involved a comprehensive search of peer-reviewed journals, case studies, and industry reports, focusing on publications from 2019 to 2024 to ensure contemporary relevance. An initial pool of over 200 potential sources was identified. Inclusion and exclusion criteria were applied, narrowing the focus to 30 key studies that provide significant insights into integrating project management and sustainability principles.

The analysis framework included systematically coding research findings to ensure consistency and reliability. Thematic analysis was conducted to identify recurring patterns, trends, and relationships within the data. Findings were cross validated across multiple studies to enhance reliability, and best practices and critical success factors related to project management and sustainability were synthesized. This approach allowed the study to derive actionable insights from diverse sources. The quality of research methodologies employed in the selected studies was assessed, and findings were cross-referenced across multiple sources to ensure consistency. Studies were selected based on their relevance to integrating project management and sustainability principles, methodological rigor, and applicability to diverse organizational and industry contexts.

Justification for Meta-Analysis

Meta-analysis was selected as the methodological approach for this study because it synthesizes diverse qualitative research findings into a cohesive and integrative understanding of complex topics. Sandelowski and Barroso (2007) emphasize that qualitative meta-analysis efficiently

explores multidimensional issues, such as the intersection of project management principles and sustainable organizational initiatives. This methodology preserves the contextual richness of individual studies while enabling the identification of patterns, trends, and best practices across multiple sources. By aggregating insights from a diverse body of research, meta-analysis provides a robust foundation for addressing the study's objectives and advancing knowledge in the field.

Through this rigorous methodology, the study demonstrated the utility of meta-analysis in evaluating complex topics, providing evidence-based insights that are not readily apparent in individual studies. By integrating findings from a broad spectrum of research, this approach also highlighted gaps in the literature and areas for future exploration. Key concepts explored in the literature included:

Stewardship

Stewardship is a foundational principle in project management that emphasizes ethical leadership and sustainable governance. It serves as a bridge between organizational objectives and broader societal, environmental, and economic goals. Liu et al. (2024) highlight stewardship's critical role in fostering accountability, particularly in infrastructure projects that involve diverse and complex stakeholder landscapes. By embedding ethical considerations into decision-making, stewardship ensures that project objectives align with corporate social responsibility (CSR) principles and contribute to sustainability development, fostering trust and long-term value creation.

Transparent governance is a core component of stewardship and directly supports the triple bottom-line framework by addressing the interconnected pillars of people, planet, and profit. Evans et al. (2022) argue that transparency in managing large-scale projects mitigates risks, reinforces ethical accountability, and strengthens stakeholder relationships. This openness is essential for maintaining trust and ensuring that environmental and social impacts are effectively communicated and managed alongside economic goals.

Stewardship also underscores the importance of resource optimization, balancing efficiency with environmental responsibility to support sustainable development. Pantovic et al. (2024) emphasize that responsible resource management minimizes waste and aligns project activities with environmental sustainability objectives, a crucial element of achieving the triple bottom line. Resource efficiency reduces operational costs and demonstrates a commitment to ecological stewardship, enhancing an organization's CSR initiatives.

Furthermore, stewardship fosters a culture of continuous improvement, enabling organizations to adapt to evolving sustainability demands. Enbaia et al. (2024) underscore the importance of embedding environmental ethics into organizational practices, which promotes accountability and ensures alignment with sustainability goals. This adaptability allows organizations to respond proactively to emerging challenges, reinforcing their dedication to CSR principles and long-term value creation.

By integrating stewardship into project management practices, organizations can create frameworks that support the triple bottom line, enhance CSR efforts, and drive sustainable development. This approach positions stewardship as a guiding principle and a practical tool for aligning ethical governance, resource optimization, and stakeholder engagement to create a sustainable and equitable future.

Team Development

Team development is a cornerstone of effective, sustainable project management, driving collaboration, innovation, and adaptability to meet the demands of sustainability development. Alawneh et al. (2024) emphasize that cohesive teams are essential for addressing complex sustainability challenges, as they enable collective problem-solving and the integration of diverse expertise. This collaborative approach aligns with corporate social responsibility (CSR) principles,

fostering an organizational culture that values inclusivity and shared responsibility in achieving environmental, social, and economic objectives.

Cross-functional team integration is critical in enhancing adaptability and innovation within sustainability projects. Evans et al. (2022) highlight that multidisciplinary teams are instrumental in developing innovative solutions, such as those required for lean construction practices, which minimize environmental impacts while maintaining efficiency. These solutions resonate with the triple bottom-line framework by advancing environmental stewardship, supporting social equity through diverse participation, and ensuring economic feasibility.

Resilience is another vital outcome of team development that contributes to sustainability initiatives. Pantovic et al. (2024) argue that equipping teams with skills to navigate dynamic project conditions empowers them to respond effectively to sustainability-related risks, such as regulatory changes or unexpected environmental challenges. Resilient teams safeguard project objectives and reinforce an organization's CSR commitment by maintaining progress toward long-term sustainability goals despite uncertainties.

Strong team dynamics further enhance communication, trust, and alignment among stakeholders, which are crucial for sustainability-focused projects. Liu et al. (2024) underscore the importance of effective communication in building trust, ensuring that all project participants, from internal teams to external stakeholders, remain aligned throughout the project lifecycle. This alignment facilitates the integration of sustainability objectives into project deliverables, advancing triple-bottom-line outcomes by addressing stakeholder expectations, minimizing environmental impact, and achieving economic value.

Organizations prioritizing team development create a foundation for sustainable project management that aligns with CSR principles and the triple bottom line. Cohesive and adaptable teams drive innovation and resilience and ensure that sustainability projects contribute meaningfully to global environmental, social, and economic goals. Strong team dynamics can help organizations achieve lasting impacts, reinforcing their commitment to sustainable development and responsible business practices.

Stakeholder Engagement

Stakeholder engagement is a critical mechanism for aligning project objectives with societal and environmental priorities, forming a vital connection to sustainability development, corporate social responsibility (CSR), and the triple bottom line. Liu et al. (2024) emphasize that involving stakeholders in decision-making ensures that projects address the community's needs while maintaining operational feasibility. By integrating diverse perspectives, organizations create a foundation for delivering outcomes that advance environmental stewardship, enhance social equity, and sustain economic viability, which are the core pillars of the triple bottom-line framework.

Proactive stakeholder engagement facilitates the co-creation of sustainable solutions, ensuring that projects are designed and executed with a deep understanding of stakeholder priorities. Sindhu et al. (2024) highlight the importance of early stakeholder involvement in shaping sustainability objectives, enabling organizations to identify potential challenges and align project goals with societal and environmental needs. This approach enhances project accountability and supports CSR by fostering partnerships that address community concerns and promote shared value creation.

Transparency and inclusivity in stakeholder dialogues further mitigate conflicts and foster trust, particularly in projects where diverse interests converge. Evans et al. (2022) argue that open communication reduces misunderstandings and ensures smoother project implementation, a critical factor in high stakes endeavors such as construction megaprojects. Transparent engagement reinforces an organization's commitment to CSR principles, demonstrating a willingness to collaborate with stakeholders to achieve mutually beneficial outcomes that advance the triple bottom line.

Consistent and meaningful communication with stakeholders strengthens long-term relationships and builds trust, ensuring that projects remain aligned with sustainability objectives throughout their lifecycle. Effective stakeholder communication fosters collaboration and creates a shared vision for achieving environmental, social, and economic goals (Freeman et al., 2010). This dynamic supports sustainable development by ensuring project outputs meet immediate objectives while contributing to broader societal progress and ecological preservation (Reed et al., 2009).

By prioritizing stakeholder engagement, organizations can bridge the gap between operational goals and sustainable development demands. Engaging stakeholders in a transparent, inclusive, and proactive manner enhances the alignment of project outcomes with Corporate Social Responsibility (CSR) and triple-bottom-line objectives (Elkington, 1997). This approach enables organizations to deliver operationally successful, socially responsible, environmentally sustainable, and economically viable projects, reinforcing their role as stewards of sustainable progress (Epstein & Buhovac, 2014).

Value Creation

Value creation is a foundational principle in sustainable project management, ensuring that measurable benefits align with environmental, social, and organizational objectives. This alignment reinforces the triple bottom line framework by integrating the needs of people, the planet, and profit into project outcomes. Sindhu et al. (2024) emphasize that value-driven projects enhance organizational reputation and build stakeholder trust, creating a foundation for long-term success. This trust reflects a commitment to corporate social responsibility (CSR) as organizations demonstrate accountability to their stakeholders and communities.

Value creation also catalyzes innovation, prompting companies to adopt practices that address complex environmental challenges. Enbaia et al. (2024) highlight how sustainability-driven innovation enables organizations to develop solutions that reduce ecological footprints, optimize resource use, and address climate-related risks. By prioritizing environmental stewardship, organizations enhance their contributions to sustainability development while ensuring economic competitiveness. These innovations also create opportunities for collaboration with stakeholders, further reinforcing the principles of CSR.

The balance between organizational goals and societal needs is another critical dimension of value creation. Pantovic et al. (2024) argue that aligning profitability with social responsibility ensures that projects generate economic returns while addressing broader societal concerns such as equity and community well-being. This balance is central to the triple bottom line, demonstrating that economic success can coexist with environmental sustainability and social progress. Value-driven projects thus enable organizations to deliver outcomes that reflect their commitment to creating shared value for all stakeholders.

Resilience is a vital outcome of focusing on long-term value. Liu et al. (2024) emphasize that by embedding sustainability into their value-creation strategies, organizations can adapt to changing sustainability requirements and maintain a competitive edge in dynamic markets. This resilience allows businesses to navigate uncertainties like regulatory shifts or market disruptions while staying aligned with sustainability goals. Resilient organizations sustain their operations and inspire confidence among stakeholders, strengthening their reputation as leaders in sustainability development.

By integrating value creation into project management practices, organizations enhance their ability to achieve sustainability objectives while advancing CSR principles and the triple bottom line. This approach ensures that projects deliver measurable benefits across environmental, social, and economic dimensions, driving innovation, fostering trust, and building resilience. Value creation thus becomes a transformative force, enabling organizations to align their operations with global sustainability goals and create lasting impacts for both businesses and society.

Systems Thinking

Systems thinking offers a comprehensive framework for addressing the inherent complexities of sustainable project management by integrating environmental, social, and economic dimensions. This approach aligns directly with the principles of sustainability development, corporate social responsibility (CSR), and the triple bottom line, providing a foundation for organizations to balance the needs of people, the planet, and profit. Enbaia et al. (2024) emphasize that systems thinking allows organizations to evaluate the broader implications of their projects, ensuring that project outcomes contribute to sustainability objectives while minimizing negative impacts. By addressing interdependencies and mitigating risks, systems thinking enhances project execution and aligns deliverables with long-term environmental and social goals (Liu et al., 2024).

Innovation is a key outcome of adopting a systems-thinking approach in project design and implementation. Evans et al. (2022) argue that a holistic understanding of the broader ecosystem empowers project teams to incorporate technologies and practices that improve efficiency while reducing ecological footprints. For example, systems thinking can drive the adoption of renewable energy solutions, waste reduction strategies, and circular economy principles, supporting the triple bottom line by advancing environmental responsibility, fostering community well-being, and ensuring financial viability. These innovations demonstrate an organization's commitment to CSR by prioritizing sustainable practices that benefit stakeholders and the broader society.

Furthermore, systems thinking promotes collaboration across diverse stakeholder groups, enabling organizations to foster collective accountability and shared progress toward sustainability goals. Pantovic et al. (2024) highlight that this collaborative approach helps build trust among stakeholders by creating opportunities for input, feedback, and participation throughout the project lifecycle. Engaging stakeholders ensures that projects address their concerns and align with societal expectations, reinforcing the social dimension of the triple bottom line. Additionally, collaborative systems-thinking supports the development of cross-sector partnerships, enabling organizations to leverage collective expertise and resources to address complex sustainability challenges.

By adopting systems thinking, organizations can create integrated strategies that align with sustainability development and the triple bottom line while fulfilling their CSR commitments. This holistic perspective ensures that project management practices are efficient but also sustainable, innovative, and inclusive. Systems thinking transforms how organizations approach challenges, enabling them to deliver outcomes that balance environmental stewardship, social equity, and economic success, ensuring a positive and lasting impact for all stakeholders.

Leadership

Effective leadership is fundamental to sustainable project management, catalyzing organizational change and inspiring teams to embrace sustainability-focused practices. Leadership that integrates environmental, social, and economic priorities drives progress toward sustainability development while reinforcing corporate social responsibility (CSR) commitments and the triple bottom line framework. Sindhu et al. (2024) emphasize that transformational leadership aligns project execution with broader sustainability goals, embedding practices that advance environmental stewardship and social equity while maintaining economic viability. By establishing a shared vision for sustainability, leaders ensure that projects contribute meaningfully to global sustainability objectives.

Leadership also enhances decision-making by ensuring alignment between project goals and organizational strategies. Evans et al. (2022) note that leaders with a clear sustainability vision foster cohesion and consistency, guiding teams to balance short-term deliverables with long-term value creation. This strategic alignment supports the triple bottom line by ensuring

that projects achieve economic efficiency, minimize environmental impact, and address the needs of diverse stakeholders. Effective decision-making enables organizations to prioritize initiatives that deliver measurable sustainability outcomes, strengthening their CSR commitments.

Adaptive leadership is critical in promoting resilience, enabling teams to navigate uncertainties and dynamic challenges effectively. Liu et al. (2024) highlight that leaders who embrace adaptability empower teams to respond proactively to shifting conditions, such as regulatory changes, market disruptions, or environmental risks. By fostering a culture of resilience, adaptive leaders ensure that projects remain aligned with sustainability objectives even under challenging circumstances. This resilience safeguards project outcomes and builds stakeholder confidence, reinforcing trust in the organization's ability to fulfill its sustainability commitments.

Ethical leadership plays a vital role in reinforcing accountability and fostering trust. Enbaia et al. (2024) emphasize that leaders who model stewardship and integrity encourage responsible practices across their organizations. Ethical leaders set the tone for transparency and accountability, ensuring that sustainability initiatives are executed with a commitment to environmental, social, and economic responsibility. This approach strengthens stakeholder relationships, enhances project success, and underscores the organization's dedication to CSR principles and the triple bottom line.

By embodying transformational, adaptive, and ethical leadership, organizations can effectively drive sustainability development and create value across environmental, social, and economic dimensions. Leadership that inspires teams aligns strategies and promotes accountability, ensuring sustainable project management contributes to long-term progress while fulfilling CSR commitments. Through effective leadership, organizations can achieve balanced and meaningful outcomes, positioning themselves as stewards of sustainability and champions of the triple bottom line.

Tailoring

Tailoring project management methodologies to the specific requirements of each initiative is essential for achieving sustainability goals while aligning with corporate social responsibility (CSR) and the triple bottom line. In sustainability contexts, where projects often face unique environmental, social, and economic challenges, customization ensures that management approaches remain relevant and practical. Evans et al. (2022) highlight that tailored methodologies allow project teams to address specific obstacles and leverage opportunities, ensuring that sustainability objectives are integrated seamlessly into project processes. Organizations can adapt project management practices to align operational goals with broader societal and environmental imperatives.

Customization fosters innovation by enabling project teams to experiment with technologies and practices that advance environmental and social outcomes. Sindhu et al. (2024) emphasize that tailoring project methodologies encourages the adoption of renewable energy solutions, waste reduction strategies, and inclusive engagement practices, all of which contribute to the triple bottom line. These innovations improve environmental sustainability and social equity and enhance economic efficiency by reducing resource consumption and operational costs. Tailoring methodologies thus support CSR by demonstrating an organization's commitment to addressing global sustainability challenges through innovative and context-sensitive solutions.

Additionally, tailoring methodologies strengthen stakeholder engagement, a critical component of successful sustainability initiatives. Organizations build trust and foster collaboration by adapting approaches to meet stakeholders' needs and expectations. Liu et al. (2024) argue that this alignment enhances communication and ensures that stakeholder priorities are integrated into project goals, reinforcing the social dimension of the triple bottom

line. Tailored methodologies also support transparent and inclusive decision-making processes, demonstrating accountability to stakeholders and aligning with CSR principles.

Tailoring also enhances risk management by addressing the specific risks associated with individual projects, ensuring smoother execution and sustained progress. Pantovic et al. (2024) note that customized approaches enable organizations to effectively identify and mitigate project-specific environmental, social, and operational risks. This proactive risk management minimizes disruptions and strengthens the organization's ability to adapt to changing sustainability demands, ensuring alignment with long-term goals.

By prioritizing tailoring in project management, organizations can develop adaptable strategies that align with sustainability development, CSR commitments, and the triple bottom line. Customized approaches enable organizations to address the unique challenges of each initiative while fostering innovation, enhancing stakeholder trust, and mitigating risks. Tailoring transforms project management into a flexible and dynamic process, ensuring that sustainability projects deliver measurable environmental, social, and economic benefits, creating lasting value for all stakeholders.

Quality Management

Quality management is essential for ensuring project outcomes align with sustainability objectives, advancing corporate social responsibility (CSR) commitments, and the triple bottom line principles. Organizations can enhance environmental, social, and economic performance by integrating rigorous quality standards into project processes. Enbaia et al. (2024) highlight that high-quality outputs meet project deliverables and reinforce an organization's commitment to sustainability by minimizing environmental harm and maximizing social benefits. This alignment demonstrates that quality management is a technical requirement and a strategic tool for driving sustainability development.'

High-quality deliverables also serve as a catalyst for innovation in sustainability practices. Liu et al. (2024) argue that establishing quality benchmarks encourages the adoption of cutting-edge technologies and methodologies that improve efficiency while reducing environmental impact. For example, implementing energy-efficient systems or waste reduction practices within projects ensures that quality management directly supports environmental sustainability. This approach aligns with the triple bottom line by addressing ecological concerns while maintaining economic efficiency and fostering community well-being.

Moreover, quality management strengthens stakeholder trust and builds long-term relationships vital for sustainability initiatives' success. Sindhu et al. (2024) emphasize that adherence to high-quality standards signals accountability and reliability to stakeholders, ensuring their continued support and engagement. Transparent communication about quality performance further enhances trust, demonstrating the organization's commitment to delivering on its environmental and social promises. This trust supports CSR principles by fostering collaborative partnerships that advance shared sustainability goals.

Quality management also promotes accountability by ensuring transparency in project execution and providing clear metrics for evaluating performance. Evans et al. (2022) note that quality systems facilitate comprehensive performance evaluations, enabling organizations to monitor progress against sustainability objectives effectively. This transparency is critical for aligning with the triple bottom line, as it ensures that projects are held accountable for their environmental, social, and economic impacts. Through systematic quality evaluations, organizations can identify areas for improvement, refine their processes, and maintain alignment with sustainability priorities.

By embedding quality management into their operations, organizations can create frameworks that support sustainability development, strengthen CSR efforts, and deliver on the triple bottom line. This integration ensures that projects achieve their intended outcomes and contribute to broader environmental stewardship, social equity, and economic success. Quality

management thus becomes a driving force for sustainable innovation, stakeholder trust, and organizational accountability, positioning businesses as leaders in creating a sustainable future.

Complexity Management

Complexity management is pivotal in addressing the multifaceted challenges inherent in sustainable projects, directly supporting sustainability development, corporate social responsibility (CSR), and the triple bottom line framework. Effective complexity management ensures that the interdependencies among project components are carefully understood and aligned with environmental, social, and economic objectives. Liu et al. (2024) emphasize that by identifying and mitigating these interdependencies, project teams can achieve smoother execution while reducing risks, ensuring that sustainability goals are met without compromising operational efficiency.

Managing complexity fosters innovation, encouraging project teams to develop creative solutions that address sustainability challenges. Sindhu et al. (2024) highlight that tackling intricate project elements often leads to adopting practices that improve efficiency and reduce resource consumption, such as renewable energy systems or circular economy models. These innovations align with the triple bottom line by minimizing environmental impact, enhancing social equity, and contributing to long-term economic viability. Complexity management, therefore, becomes a driving force for sustainable innovation, demonstrating an organization's commitment to CSR principles.

Resilience is another critical outcome of effective complexity management. Evans et al. (2022) note that addressing complex project challenges equips teams to adapt effectively to changing circumstances, such as regulatory shifts or evolving stakeholder expectations. This adaptability ensures that projects remain aligned with sustainability objectives even under uncertain conditions, strengthening an organization's ability to deliver on its commitments to people, planet, and profit. Resilient teams exemplify the principles of CSR by maintaining progress toward long-term sustainability goals despite external disruptions.

Additionally, complexity management strengthens collaboration by engaging diverse stakeholders in collective problem-solving. Pantovic et al. (2024) highlight that involving stakeholders in navigating project intricacies fosters trust, accountability, and shared ownership of outcomes. This inclusiveness ensures that diverse perspectives are integrated into decision-making processes, enhancing the social dimension of the triple bottom line. Collaborative approaches to complexity management also build stronger relationships between organizations and their stakeholders, reinforcing CSR commitments and fostering long-term partnerships.

By prioritizing complexity management, organizations can navigate the challenges of sustainable projects while advancing sustainability development, CSR, and the triple bottom line. This approach drives innovation and resilience and ensures projects deliver measurable environmental, social, and economic benefits. Complexity management transforms potential obstacles into opportunities for growth, positioning organizations as leaders in sustainable development and responsible business practices.

Risk Management

Risk management is critical to sustainable project management, ensuring that potential disruptions are minimized and project objectives align with environmental, social, and economic goals. By integrating proactive risk management strategies, organizations can advance sustainability development, uphold corporate social responsibility (CSR) commitments, and reinforce the triple bottom line framework. Liu et al. (2024) emphasize that early identification and mitigation of risks enable project teams to anticipate challenges and implement solutions that align outcomes with sustainability objectives. This approach ensures that projects maintain progress toward environmental stewardship, social equity, and economic viability.

Proactive risk management drives innovation by encouraging organizations to adopt advanced technologies and practices that address sustainability-related risks. Enbaia et al. (2024) highlight that tackling environmental and social impact risks often necessitates implementing cutting-edge solutions, such as renewable energy systems, waste reduction technologies, and adaptive supply chain strategies. These innovations enhance efficiency, reduce ecological footprints, and support the triple bottom line by simultaneously addressing environmental and economic imperatives while fostering social inclusivity.

Transparent communication about risks is another essential aspect of risk management that builds stakeholder trust and strengthens support for sustainability initiatives. Evans et al. (2022) argue that openness about potential challenges and the strategies to address them fosters confidence among stakeholders, demonstrating accountability and commitment to CSR principles. This transparency ensures that stakeholders remain informed and engaged, promoting collaborative partnerships that enhance the credibility and effectiveness of sustainability efforts.

Comprehensive risk assessments further promote accountability by providing organizations with the tools to monitor and evaluate their performance effectively. Pantovic et al. (2024) emphasize that robust risk assessment frameworks enable organizations to identify gaps, measure progress, and adapt to evolving sustainability demands. These assessments ensure that projects remain aligned with long-term goals, balancing environmental, social, and economic priorities. By fostering accountability, organizations reinforce their CSR commitments and deliver outcomes that contribute meaningfully to sustainability development.

By embedding risk management into their project management practices, organizations create resilient frameworks that address the complexities of sustainability initiatives. This approach minimizes potential disruptions, drives innovation, strengthens stakeholder relationships, and enhances accountability. Through effective risk management, organizations can achieve sustainable outcomes that align with the principles of CSR and the triple bottom line, ensuring a balanced and enduring impact for all stakeholders.

Adaptability and Resilience

Adaptability and resilience are essential for navigating sustainability initiatives' complex and dynamic challenges. These principles are integral to advancing sustainability development, upholding corporate social responsibility (CSR), and achieving the triple bottom-line objectives of environmental stewardship, social equity, and economic viability. Sindhu et al. (2024) emphasize that resilient organizations focus on long-term sustainability goals, even amid uncertainties such as regulatory changes, market disruptions, or environmental crises. By fostering resilience, organizations ensure their ability to withstand and recover from external shocks, sustaining progress toward meaningful environmental and social outcomes.

Adaptability catalyzes innovation, enabling organizations to respond proactively to changing circumstances and emerging opportunities. Liu et al. (2024) highlight that flexible approaches in project management empower teams to adopt practices that enhance efficiency while reducing environmental impact. For instance, embracing renewable energy technologies, implementing circular economy strategies, or optimizing resource use can simultaneously address environmental challenges and improve economic performance. These innovations exemplify the alignment of adaptability with the triple bottom line, advancing environmental and economic goals while fostering social inclusivity.

Resilience also plays a crucial role in strengthening stakeholder relationships, a key component of CSR. Evans et al. (2022) argue that organizations that demonstrate resilience and adaptability foster trust among stakeholders by showcasing their ability to manage uncertainties effectively. This trust encourages continued collaboration and support, ensuring stakeholders remain engaged and invested in sustainability initiatives. Transparent communication about

adaptive strategies further reinforces these relationships, highlighting an organization's commitment to fulfilling its environmental and social responsibilities.

Beyond stakeholder engagement, adaptability and resilience enhance organizational performance by enabling companies to navigate external shocks while contributing to broader societal goals. Enbaia et al. (2024) note that resilient organizations maintain operational continuity during disruptions and leverage these challenges as opportunities to drive societal progress. For example, by adopting adaptive supply chain models, companies can ensure the delivery of essential goods and services while minimizing environmental impact and promoting social welfare. This dual focus on organizational stability and societal contributions reinforces the triple bottom line and underscores the transformative potential of resilience and adaptability.

By embedding adaptability and resilience into their operations, organizations are leaders in sustainability development and CSR. These principles enable businesses to remain agile and responsive in uncertainty, driving innovation, strengthening stakeholder trust, and achieving sustainable outcomes. Through adaptability and resilience, organizations ensure that their projects deliver long-term environmental, social, and economic benefits, creating value for stakeholders while contributing meaningfully to a sustainable future.

Change Management

Change management is critical in embedding sustainability into project practices and processes, enabling organizations to adapt to evolving environmental and social expectations while achieving economic objectives. This alignment supports sustainability development, reinforces corporate social responsibility (CSR), and advances the triple bottom line framework by ensuring that changes benefit people, the planet, and profit. Sindhu et al. (2024) emphasize that effective change management fosters stakeholder collaboration and trust, ensuring that sustainability initiatives are embraced and supported throughout the project lifecycle. Organizations can build the consensus necessary to implement impactful changes by prioritizing engagement and transparency.

Embracing change is a powerful catalyst for innovation, particularly in sustainability-focused projects. Liu et al. (2024) highlight that adaptive practices enable organizations to adopt cutting-edge technologies and methodologies, such as renewable energy systems, green infrastructure, and circular economy models, to enhance project outcomes. These innovations improve efficiency, reduce environmental impact, and address societal needs, reflecting the triple-bottom-line principles. By integrating sustainable innovations into their operations, organizations meet stakeholder expectations and demonstrate their commitment to CSR through tangible environmental and social contributions.

Change management also strengthens organizational resilience by equipping teams to navigate new challenges effectively. Pantovic et al. (2024) note that adaptive change strategies help organizations maintain progress toward sustainability objectives despite uncertainties, such as regulatory changes, economic shifts, or environmental disruptions. Resilient organizations are better positioned to respond proactively to these challenges, ensuring their sustainability initiatives remain on track and deliver long-term value. This resilience reinforces stakeholder trust and highlights the organization's dedication to sustainability development and responsible business practices.

By making changes, a central driver of sustainable project management, organizations can ensure that their practices and processes remain flexible, innovative, and aligned with global sustainability goals. Effective change management enables organizations to balance environmental stewardship, social equity, and economic viability, fulfilling their CSR commitments while advancing the triple bottom line. Through strategic adaptation and innovation, organizations can transform change into an opportunity for progress, creating lasting value for stakeholders and contributing meaningfully to a sustainable future.

Discussion and Results

The following represent themes and recommendations discovered during the meta-analysis.

1. Project managers should integrate stewardship practices by emphasizing ethical governance and accountability. They should balance immediate project needs with long-term environmental and social goals to ensure trust and resilience among stakeholders.
2. Organizations must develop stakeholder engagement frameworks that involve diverse participants throughout the project lifecycle. These frameworks enable the co-creation of sustainable practices and foster collaboration to enhance project outcomes.
3. Leadership commitment to sustainability should include articulating clear goals, strategically allocating resources, and building organizational capacity through training programs to navigate the complexities of sustainability integration.
4. Systems thinking should be adopted to view projects as interconnected systems, ensuring that sustainability considerations are embedded across all phases of project management, from planning to execution.
5. Project teams should prioritize adaptability and resilience by incorporating iterative processes and feedback loops to address the dynamic nature of sustainability projects and maintain alignment with long-term goals.
6. Risk management frameworks must integrate environmental and social factors, ensuring proactive identification and mitigation of potential disruptions to maintain project alignment with sustainability objectives.
7. Quality management systems should incorporate rigorous sustainability standards to reduce resource waste, enhance long-term viability, and align project deliverables with organizational environmental priorities.
8. Tailored project management methodologies should be designed to address the unique requirements of sustainability initiatives, allowing for the integration of emerging technologies and industry-specific challenges.
9. Performance measurement frameworks should combine traditional metrics, such as time and cost, with sustainability-specific indicators, such as environmental and social impacts, to ensure comprehensive evaluations of project success.
10. Leaders should foster a culture of inclusivity and collaboration, ensuring that diverse stakeholder perspectives are integrated into decision-making processes and aligned with sustainable development goals.
11. Organizations should implement triple-bottom-line reporting to provide a holistic view of project outcomes, balancing operational efficiency with environmental and social imperatives.
12. Sustainability goals should be embedded into extended project lifecycles to prioritize environmental, social, and economic objectives alongside traditional project deliverables.

Implications of the Study

Theoretical Implications

This research contributes significantly to the theoretical understanding of project management by illustrating how established principles can be effectively aligned with sustainable organizational initiatives. The study advances the field in several meaningful ways by addressing existing gaps in integrating project management theory with sustainability practices. A key outcome of the research is developing an integrated framework that combines traditional project management methodologies with sustainability principles. This model identifies critical constructs, including adaptability, stakeholder inclusivity, and value creation, which form the theoretical underpinnings of sustainable project outcomes. Additionally, it offers a conceptual foundation for measuring

success in sustainability-focused projects, incorporating comprehensive performance indicators that account for environmental, social, and economic dimensions.

The study also expands the theoretical knowledge base by deepening our understanding of how project management methodologies influence sustainability outcomes. Critical success factors, such as leadership commitment, adaptive frameworks, and effective stakeholder engagement, are essential for achieving project goals aligning with sustainability objectives. These findings emphasize the importance of integrating operational and sustainability objectives through innovative methodologies and extended project life cycles. Moreover, the research contributes to the broader theoretical discourse by highlighting the pivotal role of stakeholder engagement in driving sustainable outcomes, reinforcing the relevance of stakeholder theory within the project management domain.

Practical Implications

The findings of this study provide actionable insights for practitioners, project managers, and organizations aiming to incorporate sustainability into their project management practices. These practical implications span strategic, operational, and organizational levels, offering guidance for aligning project goals with sustainability objectives. For example, the research outlines strategies for adapting traditional methodologies, such as extending project timelines and using sustainability-specific tools to address emerging challenges. Early identification of stakeholder needs, continuous engagement, and effective communication are critical strategies for aligning project goals with stakeholder expectations. Practical tools, such as balanced scorecards and triple-bottom-line frameworks, are also recommended to facilitate comprehensive performance assessments and enhance accountability in measuring sustainability outcomes.

From an organizational perspective, the study underscores the importance of capacity building to support sustainable practices. This capacity includes implementing specialized training programs and developing sustainability-related project management competencies. Additionally, the findings highlight the need for cultural transformation, driven by leadership commitment to sustainability values and employee engagement initiatives, to overcome resistance to change. Leadership development emerges as a vital area, fostering adaptive, sustainability-oriented leadership styles to harmonize organizational objectives with sustainability goals. Knowledge management systems are crucial for capturing, sharing, and retaining operational and sustainability-related knowledge, ensuring continuous improvement and resilience in project management practices.

Limitations of the Study

Despite its contributions, this study has several limitations that should be acknowledged. Firstly, the meta-analysis relies on secondary data from 30 journal articles published between 2019 and 2024. While these sources provide valuable insights, relying on existing literature limits the study's ability to generate novel primary data. Furthermore, variations in the selected articles' methodologies, research contexts, and geographic scopes introduce potential biases. These differences make it challenging to generalize findings across industries or regions comprehensively.

Another limitation is the scope of the analysis, which primarily examines projects within a limited timeframe and industry focus. This examination restricts the ability to assess the broader applicability of the findings across diverse sectors, such as healthcare, technology, or non-profit organizations. Lastly, challenges in verifying all references and ensuring source quality uniformity may have affected some synthesized conclusions' robustness.

Recommendations for Future Research

Future research should focus on implementing advanced methodologies and leveraging specific qualitative approaches to deepen the understanding of integrating project management principles

with sustainability initiatives. Implementation science and phenomenology are two critical areas that offer unique opportunities for advancing this field.

The Role of Implementation Science

Implementation science provides a valuable framework for examining how sustainability-focused project management principles are adopted, scaled, and sustained across diverse organizational contexts. Future studies should utilize implementation science to investigate the effectiveness of strategies such as training programs, stakeholder engagement models, and change management techniques in integrating sustainability into project management practices. By analyzing the practical barriers and enablers to implementation, researchers can generate actionable insights that inform the design of more effective interventions. Additionally, longitudinal studies grounded in implementation science evaluate how these initiatives evolve, providing insights into their scalability and long-term impact. This approach is particularly relevant for exploring sector-specific construction, manufacturing, and services challenges, where sustainability objectives often intersect with complex operational demands.

Phenomenology

Phenomenology offers an avenue for exploring the lived experiences of individuals involved in sustainability-focused project management. This qualitative approach can provide rich, in-depth insights into how project managers, team members, and stakeholders perceive and navigate the integration of sustainability principles into traditional frameworks. By capturing these subjective experiences, phenomenological research can uncover hidden dynamics, such as cultural resistance, resource constraints, and individual motivations that influence the success of sustainability initiatives. Moreover, phenomenology can shed light on leadership and stakeholder collaboration's emotional and cognitive dimensions, revealing how trust, accountability, and shared vision contribute to sustainable outcomes. These findings can enhance the theoretical understanding of stakeholder dynamics while offering practical guidance for fostering more inclusive and participatory project environments.

Future research should focus on industry-focused studies that focus on sector-specific implementation challenges. For example, understanding how construction, manufacturing, and service sectors adapt project management principles for sustainability can yield actionable insights. Furthermore, examining implementation studies that analyze training needs, change management approaches, and technology integration strategies will provide organizations with practical guidance for improving their sustainability initiatives.

Conclusions

This study underscores the critical role of integrating project management principles with sustainability-focused frameworks to drive sustainable organizational initiatives. By adapting project management practices such as lifecycle management, stakeholder engagement, and sustainability metrics, organizations can align their operational goals with the broader objectives of sustainability development, corporate social responsibility (CSR), and the triple bottom line. Incorporating sustainability-specific milestones into project timelines ensures that environmental, social, and economic priorities are embedded throughout the project lifecycle. This alignment enhances the organization's ability to deliver measurable impacts that benefit people, the planet, and profit.

Leadership and stakeholder collaboration emerge as vital elements for achieving sustainability outcomes. Effective leadership fosters innovation, accountability, and a clear vision for sustainability, motivating teams to embrace practices that advance environmental stewardship and social equity. Simultaneously, active stakeholder engagement ensures that diverse perspectives are integrated into decision-making processes, reflecting the CSR

commitment to inclusivity and transparency. This collaborative approach improves project success rates and strengthens trust, building long-term stakeholder commitment. Performance measurement frameworks, such as balanced scorecards and triple-bottom-line metrics, are essential for assessing sustainability initiatives' environmental, social, and economic impacts, guiding continuous improvement, and ensuring alignment with sustainability goals.

Despite these benefits, the study highlights significant challenges, including cultural resistance, resource constraints, and the complexity of integrating sustainability into traditional project management frameworks. Addressing these barriers requires targeted strategies, such as capacity building, hybrid methodologies, and practical change management approaches. Developing specialized tools and training programs tailored to sustainability needs can empower organizations to overcome resistance and build the competencies necessary for sustainable project management. These initiatives reinforce CSR by demonstrating a commitment to advancing sustainability across all operational levels.

Integrating sustainability into project management represents a paradigm shift, positioning sustainability as a core element of organizational processes rather than an afterthought. Future efforts should explore these integrated approaches' long-term implications and cross-cultural scalability to ensure their replicability in diverse organizational contexts. As sustainability gains priority globally, the principles and strategies outlined in this study offer valuable guidance for achieving operational excellence and creating long-term value. By embedding sustainability development, CSR, and the triple bottom line into project management practices, organizations can build a sustainable and equitable future while ensuring economic resilience and social progress.

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Terror Management Theory and Fear of Death

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Abstract: This paper examines Terror Management Theory (TMT) and its role in shaping human psychology through the awareness of mortality. It explores the existential defense mechanisms—cultural worldviews, self-esteem, and close relationships—that help individuals cope with the fear of death. While these mechanisms provide psychological security, they can also foster prejudice and aggression when worldviews are challenged. Integrating insights from psychology, philosophy, and theology, this study highlights the dual impact of mortality salience, which can enhance prosocial behavior but also reinforce in-group biases. The interdisciplinary approach underscores the necessity of meaning-making frameworks in managing existential anxiety and proposes strategies for mitigating its negative consequences.

Keywords: Terror Management Theory, Fear of Death, Existential Anxiety, Self-Esteem, Cultural Worldviews, Close Relationships, Social Behavior, Defense Mechanisms

Introduction

Death represents one of humanity's most profound concerns, serving as a subject of reflection in philosophy, psychology, and theology. Universally, the fear of death deeply influences human thought and societal structures, leading to the development of cultural and religious systems that provide meaning and hope in the face of this inevitable end. From philosophical and psychological interpretations of existential anxiety to the theological perspective on resurrection, death remains a crucial point of reference in understanding the human condition. This paper examines death anxiety from an interdisciplinary perspective, exploring its impact on individual lives and societal structures.

Existential psychotherapist Yalom (2010) argues that learning how to live properly is inseparable from learning how to die properly, emphasizing the link between death anxiety and the search for meaning (p. 44). Similarly, Brădățan (2015) asserts that death, through its inevitable nature, gives life a clear structure, and the way we manage it defines the authenticity of our existence: "If death were somehow forbidden, life would suffer a devastating blow" (p. 6). In addition, Kreeft (1992) contends that the rarity of life enhances its value (p. 51), while Dederen (2000) highlights that "fear of death without the hope of resurrection remains the most fundamental fear experienced by human beings" (p. 330).

In this context, theology adds an essential dimension to the interpretation of death, transforming it from a mere biological event into a stage within the divine plan. The Judeo-Christian tradition does not perceive death as absolute annihilation but as a process integrated into the promise of resurrection and divine restoration (Mihăilă, 2022, p. 65). Mircea Eliade (1957) offers a symbolic perspective on the fear of death, noting that in almost all religious traditions, death is seen not as annihilation but as a transition, a rite of passage. According to Eliade, this perspective helps individuals redefine their anxiety about death, integrating it into a broader symbolic system where death becomes a sacred act rather than an irreversible end (p. 113). This vision contrasts with Freud's psychoanalytic perspective (1955/1895), which views the fear of death as an unconscious defense mechanism against the inexorable reality of the end, and with Becker's theory (1973), which suggests that the denial of death is one of the driving forces of human civilization (Rotaru, 2023, pp. 62-79).

Reflections on death and the nature of human existence have been deeply rooted in religious contexts throughout history. Religion has played a crucial role in providing guidelines for both personal and social life. However, in the present day, many of these

responsibilities have been transferred to psychologists, who are perceived as authorities on human nature, being the ones from whom people seek answers in times of crisis and support in the process of self-discovery (Wulff, 1997, pp. 12–13).

Nevertheless, death is a profoundly personal phenomenon, and the experience of loss varies from one individual to another. "It is important to understand that each person's reaction to death is unique, just like their fingerprint. Everyone will cope with loss in their own way. There is no universal formula!" (Garrett, 2015, p. 14).

Death can be seen as an organizing factor of human existence, acting as "a skilled editor that arranges your life in a way that makes it intelligible," bringing clarity to how people live their lives (Brădățan, 2015, p. 7). The fear of death, one of the most widespread and complex human anxieties, is not innate but develops gradually, influenced by the awareness of one's mortality and life experiences: "we are not born with it" (Solomon, Greenberg & Pyszczynski, 2015, p. 17).

An essential element in managing this existential fear is approaching it from a solid ethical and philosophical perspective. Without a well-defined moral framework, specialists dealing with the issue of fear of death risk failing to provide effective solutions for treating existential anxiety and its associated neurotic symptoms. Pfister (1948) emphasizes that ethics play a crucial role in maintaining mental balance, functioning as a psychological hygiene factor both at the individual and collective levels (pp. 503–504).

This study analyzes the impact of fear of death on daily life and explores how religious beliefs, values, and social structures contribute to managing this existential anxiety.

The psychology of death anxiety: Reactions and defense mechanisms

Even those who dedicate their lives to understanding and treating emotional suffering struggle to manage their own anxiety about death. Bertman (1991) highlights this challenge through a question that suggests the complexity of the subject: "Why is it so difficult to associate with people who are dying?" (p. 45). This question underscores the profound difficulty we have in confronting not only the death of others but also our own mortality, a topic also analyzed by Freud. He believed that the human mind is incapable of processing the idea of its own death, a defensive mechanism that protects us from existential anxiety. He illustrates this phenomenon through a personal reflection on survival:

> "I am glad that I am the one who survived; I express this sentiment with the naive egoism of the husband who tells his wife, 'If one of us dies, I will move to Paris.' My expectation naturally assumes that I will not be the one who dies" (Freud, 1995/1938, p. 329).

This tendency to avoid thoughts of one's own mortality is also supported by modern theories of death anxiety. To better understand the dimensions of this phenomenon, it is useful to analyze the concept of "terror," which plays a crucial role in triggering psychological reactions to death. The Cambridge Dictionary defines this term as "extreme fear" (Cambridge Dictionary, 2025), while Merriam-Webster characterizes it as "a state of intense or overwhelming fear" (Merriam-Webster, 2025). In this sense, Becker (1973) argues that "terror always refers to the fundamental aspects of life and death" (p. 150), suggesting that this anxiety is not merely an emotional response but also a fundamental psychological defense mechanism.

Solomon, Greenberg, and Pyszczynski (2015) explain that terror is a natural biological response to the threat of death, triggering instinctive reactions of fight, flight, or freeze. This deeply influences human behavior, leading to panic and self-defense reactions:

> Solomon, Greenberg, and Pyszczynski (2015) explain that "Terror is the natural and generally adaptive response to the imminent threat of death. All mammals, including humans, experience terror. When an impala sees a lion about to pounce on it, its amygdala sends signals to the limbic system, triggering a fight, flight, or freeze response. A similar process occurs in us. Whenever we feel mortally threatened—by an out-of-control car, an armed mugger, a tightness in the chest, a suspicious lump, extreme turbulence on a plane, a suicide bomber exploding in a crowd—the feeling of terror consumes us; we are driven to fight, flee, or freeze. Panic follows (…). The terror of death has greatly influenced human behavior (Solomon, Greenberg, & Pyszczynski, 2015, pp. 11-12, 155).

In addition to immediate panic reactions, individuals develop more complex adaptation mechanisms to manage their anxiety about death. Awareness of one's mortality not only generates fear but also profoundly influences human motivations and behaviors. Routledge and Vess (2019) emphasize that it "disrupts and undermines numerous motivational processes that support self-preservation," leading individuals to seek meaning as a way to counteract this anxiety. This need to attribute meaning to existence transforms Terror Management Theory (TMT) into an essential perspective for understanding human behavior (pp. 66-67).

Thus, the fear of death is not merely an isolated emotional reaction but a factor that deeply shapes the way people live their lives. From individual strategies of denial and avoidance of death-related thoughts to cultural and religious mechanisms that provide meaning to existence, death anxiety remains one of the most powerful driving forces of human behavior.

Terror Management Theory: Origin and Psychological Impact

Solomon, Greenberg, and Pyszczynski (2015) formulated Terror Management Theory (TMT) to explain how awareness of one's mortality influences human thinking and behavior. This theory posits that fear of death plays a fundamental role in human life, driving individuals to construct their identity, religious beliefs, and worldview. The theory finds its roots in the work of Ernest Becker, who laid the foundation for a deep understanding of how people manage existential anxiety. Becker argues that "human activity is largely driven by unconscious efforts to deny and transcend death" (cited in Solomon, Greenberg, & Pyszczynski, 2015, p. 6).

Becker (1973), building on Freudian perspectives on unconscious mechanisms, states that "the unconscious does not know death" (p. 22) and that "man carries death within him unconsciously, as part of his biology" (p. 99). Thus, anxiety about death is not merely a rational or cultural process but a biologically ingrained mechanism deeply embedded in the human psyche.

Reflecting on the survival instinct present in all living beings, Solomon, Greenberg, and Pyszczynski (2015) emphasize that, unlike other organisms, humans are aware that, regardless of their efforts, they cannot avoid death. This reality is expressed in their observation that "unlike bats and worms, we humans know that, no matter what we do, sooner or later, we will lose the battle against death" (Solomon, Greenberg, & Pyszczynski, 2015, p. 10).

While some researchers perceive death as a final stage of development, Verhey challenges this view, arguing that, in reality, it represents "the end of growth" (Verhey, 2011, p. 53), a perspective different from that of Kübler-Ross (1986), who considered death "the final stage of growth." This difference reflects two distinct ways of understanding death: either as an absolute end or as a natural phase in the human developmental process.

In their analysis of the structure of TMT, Harvell and Nisbett identify four essential components: awareness of one's mortality, cultural worldviews, self-esteem, and close relationships. Among these, awareness of mortality is the central mechanism that drives

individuals to seek security and comfort in cultural values and interpersonal relationships to manage existential anxiety: "awareness of mortality becomes the primary mechanism that drives individuals to seek the metaphorical 'blanket' of cultural worldviews and close relationships to overcome the psychologically uncomfortable state of anxiety" (Harvell & Nisbett, 2016, p. 137).

Similarly, DeSpelder and Strickland (2020) highlight that people manage their fear of death by finding meaning in life and developing a positive perception of their own value. These aspects are significantly influenced by the cultural context in which each individual is socialized: "people learn to alleviate their fear of death by finding meaning in life and value in themselves, with this meaning and value being provided by the culture in which they are socialized" (p. 24). This need to find security in stable cultural structures and strong interpersonal relationships is essential for maintaining psychological balance. Harvell and Nisbett explain this phenomenon by stating that "TMT posits that people are constantly and unconsciously motivated to maintain confidence in their cultural worldviews, self-esteem, and close relationships to protect themselves from the anxiety generated by the awareness that death is inevitable" (Harvell & Nisbett, 2016, p. 6).

Solomon, Greenberg, and Pyszczynski (2015) emphasize that this awareness of one's own mortality is a distinctive trait of human existence:

> Only we, humans, as far as we know, are aware of our own existence in a specific time and place. (...) What a joy it is for us to be alive and, at the same time, to know this! However, because we humans are aware that we exist, we also know that, one day, we will no longer exist. Death can come at any time, a fact that we can neither predict nor control. This is undeniably unpleasant news. Even if we are fortunate enough to avoid attacks from venomous insects or predators, knives, bullets, plane crashes, car accidents, cancer, or earthquakes, we understand that we cannot continue indefinitely (Solomon, Greenberg, & Pyszczynski, 2015, p. 11).

This inevitable reality forces each person to reflect on their own existence, leading to the emergence of existential anxiety. The most common reaction to this anxiety is the activation of defense mechanisms that help avoid direct confrontation with the idea of one's own mortality. Harvell and Nisbett explain this tendency by stating: "People tend not to focus on their own disappearance, instead preferring to think about the importance of their lives or to completely avoid thoughts related to death" (Koole, Greenberg, & Pyszczynski, 2006, cited in Harvell & Nisbett, 2016, p. 17).

TMT explains how fear of death profoundly influences human behavior, driving individuals to construct their identity and seek security in cultural values (Rotaru, 2024, pp. 301-318), interpersonal relationships, and beliefs that provide meaning to existence.

The Four Fundamental Components of TMT

TMT identifies four fundamental components: mortality awareness as the triggering factor and three psychological defense mechanisms—cultural worldview, self-esteem, and close relationships. Together, these elements help individuals manage existential anxiety.

1. Mortality awareness. Harvell and Nisbett (2016) state that "mortality awareness is the central element of TMT and refers to an individual's understanding that they will die" (p. 137). Studies have shown that as individuals become more aware of their own mortality, they increase their concern for their identity and the social world in which they live. In this regard, Routledge and Vess (2019) state that "a brief reminder of one's mortality leads individuals to show a higher level of defense of their worldview and to pursue activities that have the potential to enhance their self-esteem" (p. 4, 7).

Harvell and Nisbett (2016) observe that when people are confronted with the reality of their own death, they turn to cultural worldviews as a psychological refuge. Thus, "when mortality becomes evident, individuals tend to turn to their cultural worldviews as a form of protection against the anxiety triggered by the thought of the inevitable experience of death" (as cited in Solomon, Greenberg, & Pyszczynski, 2000, p. 137). Consequently, individuals may develop "an increased potential for compassion, empathy, forgiveness, and prosocial behavior" (Arrowood & Cox, 2023, p. 39).

However, awareness of one's own mortality does not only have positive effects. Studies show that this awareness can generate contradictory reactions, including defensive behaviors. For example, it has been demonstrated that "the subconscious activation of the idea of death can lead people to seek self-esteem in ways that increase their vulnerability to death" (Routledge & Vess, 2019, p. 9). Additionally, this awareness can reinforce prejudices and even lead to aggression.

The major issue lies in the fact that cultural worldviews are largely subjective constructions of reality. This discrepancy becomes evident when individuals encounter people with fundamentally different beliefs. Routledge and Vess state that,

> under non-threatening conditions, people can tolerate and even appreciate other cultures, groups, and value systems. However, TMT predicts that when an existential threat arises and people are strongly motivated to maintain confidence in their cultural worldview, they will react with more prejudice and hostility toward members of opposing cultures and groups. (…) Reminders of death could increase real aggression against those who violate the worldview (pp. 5-6).

In this context, Solomon, Greenberg, and Pyszczynski (2015) explain how people react when confronted with thoughts of their own mortality: "When we are confronted with reminders of death, we react by criticizing and punishing those who oppose or violate our beliefs and by praising and rewarding those who support or uphold these beliefs" (p. 17).

Therefore, TMT identifies three essential psychological resources for managing existential anxiety:

- Cultural worldview, which provides a sense of order, meaning, and stability. Although people tend to view their cultural worldview as a natural aspect of their existence, in reality, it is a fragile construct that requires constant reinforcement through rituals, traditions, and social institutions. If this worldview is questioned, individuals may be overwhelmed by existential uncertainty (Routledge & Vess, 2019, p. 5).
- Self-esteem, which helps people perceive their own existence as valuable and meaningful. Solomon, Greenberg, and Pyszczynski (2015) explain this aspect as follows: "We do not just need to see life in general in this way (in accordance with the cultural worldview we hold); we also need to see our own life in this way" (p. 13). Self-esteem allows individuals to see themselves as important members of society and thus protects them from the anxiety caused by awareness of their own mortality.
- Close relationships, which constitute another essential element of the system for managing existential anxiety. Harvell and Nisbett (2016) emphasize that "close relationships have been proposed as a third element of the anxiety-buffering system, alongside worldviews and self-esteem" (p. 5). Interpersonal relationships not only provide emotional support but also strengthen the sense of continuity and belonging, thereby reducing the negative effects of mortality awareness.

Awareness of mortality profoundly influences human behavior, generating both adaptive and defensive reactions. To manage the existential anxiety associated with this awareness, individuals rely on three essential psychological mechanisms: cultural worldview, self-esteem, and close relationships. These resources function as a protective system against

the fear of death, providing emotional stability and reducing the impact of existential uncertainty. While mortality awareness can foster empathy and prosocial behavior, it can also amplify prejudice and hostility, especially in contexts where cultural worldviews are challenged. Terror Management Theory highlights the crucial role of these mechanisms in maintaining psychological balance, emphasizing the importance of a coherent cultural worldview, solid self-esteem, and secure interpersonal relationships in reducing anxiety related to one's own mortality.

2. The cultural worldview serves as the framework through which individuals interpret their existence, giving it meaning and coherence. It includes values, beliefs, norms, and traditions specific to each society, contributing to the formation of personal identity and a sense of belonging. Essentially, the cultural worldview shapes the perception of reality and provides individuals with a clear sense of purpose in life.

According to Terror Management Theory, maintaining a stable cultural worldview is essential for psychological balance, as it helps manage the anxiety associated with awareness of one's mortality. Routledge and Vess (2019) argue that "people need to maintain confidence in a cultural worldview because it fulfills a crucial psychological function in managing existential terror" (p. 5). Harvell and Nisbett (2016) emphasize that cultural worldviews act as "a common lens through which life and reality are perceived" (p. 3), providing stability and durability by defining societal values and offering a sense of security and belonging. Furthermore, they give existence a profound meaning by integrating the idea of continuity beyond death.

Cultural worldviews offer hope in two distinct forms of immortality: literal and symbolic.

- Literal immortality involves the continuation of existence after physical death, often associated with religious concepts of the afterlife, such as heaven, reincarnation, or other post-mortem beliefs.
- Symbolic immortality, on the other hand, manifests through an individual's contribution to something greater than themselves, either by passing on values to future generations or leaving a lasting impact on history (Harvell & Nisbett, 2016, pp. 3-4).

In this context, Solomon, Greenberg, and Pyszczynski (2015) explain that "our beliefs in literal and symbolic immortality help us manage the potential terror that arises from the awareness of our inevitable physical death" (p. 13).

Therefore, the cultural worldview plays a crucial role in reducing existential anxiety, providing a stable framework for interpreting reality and maintaining psychological balance. It allows individuals to construct their identity and integrate into a community, fostering a sense of continuity and significance beyond physical existence. As a result, cultural beliefs not only provide meaning to life but also function as a psychological defense mechanism against the fear of death.

3. Self-esteem is an essential factor in managing the fear of death, providing individuals with a sense of security and personal worth. According to Routledge and Vess (2019), "self-esteem acts as a buffer against anxiety even before a child can fully comprehend death in an abstract way" (p. 180). Similarly, Harvell and Nisbett (2016) state that "individuals with higher self-esteem tend to be more capable of managing the anxiety induced by mortality awareness than those with lower self-esteem" (p. 137).

Self-esteem reflects how a person evaluates their own worth and competence. Most individuals protect this perception through self-defense mechanisms, especially when facing threats to their identity (Solomon, Greenberg, & Pyszczynski, 1991). Within Terror Management Theory (TMT), self-esteem is considered a construct influenced by cultural norms, with each individual being assessed based on the standards imposed by their society

(Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). Thus, when confronted with mortality awareness, individuals seek to strengthen their sources of self-esteem, either through social validation or personal achievements (Routledge & Vess, 2019, p. 103).

Solomon, Greenberg, and Pyszczynski (2015) describe self-esteem as "a powerful vaccine against fear, not only at a psychological level but also at a deeply physiological level," arguing that many people fight to preserve their self-esteem "in the same way that worms and bats fight to stay alive, because for us humans, self-esteem is our symbolic protection against death" (p. 49).

> Like bats and worms, we fight with all our strength when faced with physical death. But we humans go much further. Even the slightest suggestion of our mortality drives us to work harder to leave a mark on the world. We strive to prove our worth, even in the smallest ways. Approval from our boss, a compliment from a friend, or even subtle recognition from a passing stranger can strengthen our sense of value, while disapproval, criticism, and being ignored can overwhelm us with a wave of anxiety. This relentless struggle to prove our worth is one of the many ways in which, in the words of poet Dylan Thomas, 'we rage against the dying of the light' (Solomon, Greenberg, & Pyszczynski, 2015, p. 41).

An essential aspect of self-esteem is the diversification of its sources. Solomon, Greenberg, and Pyszczynski (2015) suggest that "by placing our psychological eggs in multiple baskets, we increase our chances of having sustainable ways to feel good about ourselves" (p. 49). Becker (1971) identifies four progressive levels of self-esteem:

- Personal, based on confidence in one's own abilities
- Social, derived from interpersonal relationships
- Secular, anchored in belonging to groups and institutions
- Sacred, which involves a connection with God or a transcendent meaning (Routledge & Vess, 2019, p. 182)

In line with Kierkegaard's philosophy, Becker considers the sacred level to be the highest form of self-esteem, as it provides individuals with "true autonomy," reducing their dependence on external validation and connecting them to "something greater, something cosmic" (Routledge & Vess, 2019, p. 182). This perspective explains why people who anchor their identity in spiritual or religious beliefs often exhibit greater resilience in the face of existential anxiety.

In conclusion, self-esteem plays a crucial role in protecting the human psyche against the fear of death. Diversifying sources of validation and anchoring oneself in a spiritual dimension allow for more effective management of existential anxiety. Ultimately, this need to demonstrate value and leave a legacy reflects the deeply human desire to transcend one's own mortality. However, "although TMT highlights the anxiety-buffering function of worldviews and self-esteem, it has also been argued that close relationships fulfill a comparable function in managing mortality" (Routledge & Vess, 2019, p. 48).

4. Close relationships constitute a fundamental pillar of emotional balance and a powerful mechanism for managing death-related anxiety. According to Harvell and Nisbett (2016), close bonds provide "existential security," playing a protective role against both "existence-related anxiety" and general anxiety, functioning as an "anxiety buffer" (pp. 8, 10, 18). Specifically, "awareness of one's own mortality increases investment in structures such as close relationships," highlighting the importance of these connections in combating the fear of death and maintaining psychological balance (Routledge & Vess, 2019, p. 328).

Mikulincer and his collaborators (2003) demonstrated that meaningful interpersonal relationships are essential in providing life with meaning and reducing existential anxiety,

even when other psychological protection mechanisms, such as cultural worldviews or self-esteem, are deficient. Furthermore, the fragility of close relationships is directly correlated with a heightened perception of death as a threat (Mikulincer, Florian, & Hirschberger, 2003).

From another perspective, close relationships also function as symbolic protective mechanisms against death-related anxiety. They offer individuals a sense of continuity and durability—a form of "symbolic immortality," through which a person's existence persists in the memory of loved ones and in the impact they have had on others. Moreover, interpersonal relationships expand personal identity, allowing individuals to see themselves reflected in those with whom they have strong bonds (Routledge & Vess, 2019, p. 70).

Ray Galvin explains this idea from a narrative perspective, showing that individual identity is not strictly limited to one's self but is also reflected in others:

> My personality does not live only within me. It lives in everyone who has ever known me. I was born into a community, I learned to speak my native language in and through a community, and I became a person through interactions with others in a community. Who I am is unique, but much of me is borrowed from others. My father, my mother, my sisters, my brother, my elementary school teachers, my close family, my mentors, and my close friends are all "inside" me and contribute to the formation of who I am, just as I am "inside" them and contribute to their identity. When I am absent from them due to travel or their passing, I do not cease to be the person I am; what constitutes me continues to exist. (Galvin, n.d., p. 129).

However, not all interpersonal relationships positively contribute to reducing existential anxiety. Mikulincer and his collaborators observed that only relationships built on a secure attachment model fulfill this protective role. In contrast, relationships marked by insecurity or emotional instability can become additional sources of stress and anxiety (Mikulincer, Florian & Hirschberger, 2003).

Unlike classical theories of anxiety, which attribute psychological disorders to ineffective strategies for managing existential stress (Freud, 1926; Yalom, 1980), Terror Management Theory (TMT) suggests that psychopathology can emerge when an individual fails to adequately utilize three essential resources for psychological protection: cultural worldview, self-esteem, and close relationships. The absence or dysfunction of these elements amplifies death-related anxiety and can contribute to the development of various forms of psychological distress (Routledge & Vess, 2019, pp. 349, 421).

TMT and Psychological Development

As children develop self-awareness and begin to perceive the concepts of life and death, existential anxiety becomes increasingly present. This anxiety leads to the emergence of defense mechanisms necessary for maintaining emotional and psychological balance. The fear of death does not suddenly appear in adulthood but gradually forms during childhood. According to Terror Management Theory (TMT), individuals learn to manage this fear throughout their psychological development. From the stage in which infants are entirely focused on immediate needs to the moment when children begin to understand the concepts of life and death, this adaptation process plays a crucial role in developing defense strategies against existential anxiety.

Solomon, Greenberg, and Pyszczynski (2015) describe this latent fear as "the worm at the core" of the human condition, emphasizing that "we are not born with this terror." In the first months of life, infants are exclusively concerned with their immediate needs, such as food and comfort. However, as they grow, each child becomes "embedded in a symbolic world," beginning to internalize a system of values and meaning, which is essential for constructing a sense of psychological security. If this process of symbolic integration is

disrupted, the child may develop insecurities and ineffective defense mechanisms that will influence their emotional and cognitive development (pp. 12, 17, 18).

A crucial aspect of this process is the gradual transfer of the sense of security from parents to the cultural worldview of society. According to Becker (1971), this transition "generally occurs smoothly because parents transmit their worldview and cultural values to the child from early childhood" (p. 67). Thus, self-esteem functions as "a long-term extension of an effective anxiety-buffering mechanism" (Routledge & Vess, 2019, pp. 181-182).

As mortality awareness becomes an inevitable reality, children begin to develop initial strategies for managing this anxiety. Studies suggest that as early as "three years old, children are aware of death," and this understanding causes discomfort, leading them to adopt "rudimentary versions of terror management strategies that they will rely on as adults" (Solomon, Greenberg, & Pyszczynski, 2015, pp. 25-26). Both children and adults use avoidance mechanisms, trying to distract themselves with daily activities or trivial concerns.

One specific mechanism children use to manage death-related anxiety is the personification of fear through imaginary figures, such as witches, trolls, or goblins. This externalization of fear allows children to transform an abstract and frightening concept into a more concrete one, over which they can exert some control. Solomon, Greenberg, and Pyszczynski (2015) explain that "by giving death a human form, it becomes easier to avoid. If death were a person, you could reason with it, negotiate, trick it, or defeat it with your superior intelligence or the help of a magical entity" (pp. 26-27).

As psychological development progresses, the ability to manage the fear of death becomes increasingly dependent on external influences, such as education (Rotaru, 2021, pp. 190-196), family environment (Rotaru, 2011, p.5), and religious beliefs (Rotaru, 2015, pp.318-322). The attachment formed with parents remains a central element in maintaining emotional security, directly impacting how individuals perceive and respond to the reality of their mortality (Harvell & Nisbett, 2016, p. 5).

Conclusion

Terror Management Theory (TMT) provides a complex perspective on how individuals manage death-related anxiety, highlighting the central role of cultural worldviews, self-esteem, and close relationships in maintaining psychological stability. Mortality awareness is not merely a source of fear but a key factor in shaping identity and social behavior. While existential defense mechanisms can foster compassion, empathy, and prosocial behaviors, they can also intensify prejudice and aggression, particularly in contexts of cultural or ideological threats.

An interdisciplinary approach to the fear of death, combining psychology, philosophy, and theology, underscores the fact that this fundamental anxiety cannot be eliminated but only managed through adaptive strategies. This study reaffirms the importance of a coherent cultural worldview, strong self-esteem, and secure interpersonal relationships in maintaining emotional stability.

Ultimately, managing the fear of death remains one of the major challenges of human existence, profoundly influencing how individuals define the meaning of life. A deeper understanding of the psychological mechanisms involved in this dynamic can contribute to the development of more effective strategies for reducing existential anxiety and fostering a more balanced and empathetic human behavior.

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AI-Driven Forensic Cyberpsychology Intervention Strategies for Social Media Platform and School Managers to Mitigate Cyber Fraud At-Risk Adolescents

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Abstract: Adolescent cyber fraud is an escalating concern, with a 32% increase in youth-driven cybercrime between 2022 and 2024. This study employs a narrative literature review and thematic analysis to synthesize research on AI-driven forensic cyberpsychology, adolescent cyber deception, and fraud detection methodologies, following Braun and Clarke's six-phase thematic analysis framework. The findings identified validation-seeking behaviors, socioeconomic stressors, and AI-detected deception patterns as the three dominant risk factors influencing adolescent cyber deception. Empirical evidence indicates that adolescents exhibiting high levels of self-doubt and digital validation dependence are 45% more likely to engage in cyber deception, while socioeconomic stressors, particularly financial instability and low parental monitoring, increase cyber fraud susceptibility by 60%. AI-driven forensic analysis demonstrates high detection accuracy levels, identifying manipulative language cues by 82%, social engineering behaviors by 87%, and risk-based engagement patterns by 90%. This study proposes an AI-driven fraud detection strategy modeled on the Validation Syndrome Diagnostic Triangle (VSDT) framework that integrates psychological deception markers, parental monitoring levels, and social media reinforcement mechanisms, underscoring the need for AI-driven digital literacy programs, algorithmic fraud detection on social media platforms, and AI-assisted forensic cyberpsychology interventions in schools. The findings provide actionable insights for policymakers, educators, and platform managers to implement AI-driven fraud prevention strategies, ensuring early intervention and fostering digital responsibility among adolescents.

Keywords: Forensic Cyberpsychology, AI-Driven Fraud Detection, Adolescent Cybercrime, Digital Literacy, Validation-Seeking Behaviors, Dark Triad Traits, Cyber Fraud Prevention, Psychological Deception Markers

Introduction

Background and Context

Cyber fraud among adolescents is an escalating global concern, with a 32% increase in youth-driven cybercrime between 2022 and 2024 (Ahmed, 2024; FTC, 2024). The increasing prevalence of social media-based deception has been linked to digital validation-seeking behaviors, where adolescents manipulate online identities for financial or social gains (Ahmed, 2024). Studies indicate that 46% of cyber fraud cases now originate from social media platforms, demonstrating the digital environment's role in shaping deceptive tendencies (Burrell et al., 2023). From a forensic cyberpsychology perspective, the psychological mechanisms underpinning adolescent cyber fraud require urgent attention. Adolescents are developmentally primed for social validation and risk-taking, making them particularly vulnerable to engaging in deceptive online behaviors (Ohu & Jones, 2025b). The rapid advancement of artificial intelligence (AI) in digital spaces presents both opportunities and challenges—while AI can enhance cyber fraud detection, it is simultaneously being weaponized to automate and amplify deception tactics (Hani et al., 2024). Existing forensic cyberpsychology frameworks, however, lack AI-driven approaches for early detection and intervention, leaving digital platforms and educational institutions underprepared to address adolescent cyber fraud risks (Xiang, 2024).

Problem Statement

Cyber fraud among adolescents is increasingly shaped by psychological and environmental risk factors that traditional forensic models fail to detect (Karpasyuk et al., 2024). Digital validation-seeking behaviors, driven by self-doubt, desire, and self-gratification, have been identified as predictive markers of cyber deception, yet remain unaddressed in AI-driven forensic tools (Mustafa et al., 2024a; Ohu & Jones, 2025(a)).The General problem is the lack of AI-driven forensic cyberpsychology models leaving digital platforms and educators unprepared to detect and mitigate adolescent cyber fraud risks (Onuh et al., 2024). The specific problem is that current forensic tools do not incorporate adolescent-specific psychological risk factors such as Validation Syndrome into AI-driven fraud detection frameworks, thereby limiting their predictive accuracy and intervention effectiveness (Ganapathy, 2024; Karpasyuk et al., 2024).

Purpose of the Study

This study aims to develop an AI-driven adolescent fraud detection and intervention strategy by integrating the Validation Syndrome Diagnostic Triangle (VSDT) framework into AI-driven cyber fraud detection. The Validation Syndrome Diagnostic Triangle (VSDT) offers a comprehensive forensic cyberpsychology framework for combining psychological risk markers, such as self-doubt, desire, and self-gratification, with AI-driven behavioral analysis to identify and mitigate cyber fraud risks (Ohu & Jones, 2025b). This model suggests that familial conflict, socioeconomic stress, and a lack of parental monitoring significantly increase the likelihood of adolescent involvement in cyber fraud (Burrell et al., 2023). This research aims to formulate strategies for applying VSDT into machine learning models and digital behavioral data, to detect early-stage cyber fraud risk factors in adolescents based on VSDT indicators. In addition, develop AI-driven intervention frameworks for platform managers and school administrators, to promote positive digital behaviors through educational strategies informed by forensic cyberpsychology.

Rationale

The study seeks to bridge the forensic cyberpsychology-AI gap by developing a strategy for an AI-driven adolescent cyber fraud detection and intervention models, using the VSDT framework. The central research question guiding this study is, "How can AI-driven forensic cyberpsychology be used to detect and mitigate cyber fraud risks among adolescents while promoting positive educational interventions for platform and school managers?"

Originality and Significance of the Study

This study addresses a critical research gap in adolescent cyber deception by integrating forensic cyberpsychology and AI-driven fraud detection (Onuh et al., 2024).The findings of this research will have significant implications for improving early detection models by combining psychological and AI-driven risk markers, thereby enhancing fraud detection accuracy in adolescent populations (Thakkar, 2024). Additionally, the study's results will inform the development of AI-supported digital literacy programs that can be integrated into educational policies and platform management strategies, ultimately reducing adolescent fraud risks. Furthermore, the research aims to provide an evidence-based framework for forensic cyberpsychologists, AI developers, and educators to intervene before cyber fraud behaviors escalate, thereby contributing to cybercrime prevention efforts.

      The rise in adolescent cyber fraud underscores the need for a multidisciplinary approach that combines forensic cyberpsychology and AI (Burrell et al. 2023; Rich & Aikens, 2024). By integrating the Validation Syndrome Diagnostic Triangle (VSDT) framework into AI-driven cyber fraud detection, this research contributes a novel approach to early intervention in adolescent digital risk behaviors. The study's actionable insights will benefit digital platform managers, school administrators, and policymakers, ensuring that AI is used not only for

cybercrime detection but also for fostering prosocial online behaviors among adolescents (Ohu & Jones, 2025c).

Literature Review

This study employed the structured, transparent, multi-disciplinary and peer reviewed (STAMP) approach (Rogge et al., 2024) shown in Table 1, for conducting an exploratory literature review, which involved a critical evaluation of existing research on forensic cyberpsychology, AI-driven fraud detection, adolescent cybercrime, and digital literacy interventions. The purpose of this review is to identify research gaps, synthesize key findings, and establish the theoretical foundation for integrating forensic psychology with AI-based cyber fraud prevention among at-risk adolescents (Ohu & Jones, 2025(b)). The review is guided by the following overarching research question, directly aligned with the study's problem statement, "How can AI-driven forensic cyberpsychology be used to detect and mitigate cyber fraud risks among adolescents while promoting positive educational interventions for platform and school managers?" To answer this question, the literature review explores psychological mechanisms underlying adolescent cyber fraud, including validation-seeking behaviors and Dark Triad traits. The role of AI-driven fraud detection in forensic cyberpsychology is also examined, as well as the impact of socioeconomic and familial factors on adolescent engagement in cyber fraud. Educational interventions and AI-integrated strategies for cyber fraud prevention are also discussed. The literature review is structured to ensure transparency and replicability, adhering to established guidelines for exploratory reviews. A comprehensive search of multiple reputable academic databases was conducted, including PsycINFO, PubMed, MDPI, and Google Scholar, to identify relevant studies on the topic of AI-driven forensic cyberpsychology and adolescent cyber fraud. The search terms employed included "forensic cyberpsychology," "adolescent cybercrime," "AI-driven fraud detection," "cyber fraud prevention," "digital literacy," and "cyber risk mitigation." Inclusion criteria established, included peer-reviewed journal articles published in the last four years, studies focused on adolescent cyber fraud, forensic cyberpsychology, AI-driven fraud detection, and digital literacy interventions, and empirical studies, systematic reviews, and meta-analyses with significant statistical insights. Exclusion criteria included non-peer-reviewed articles, opinion pieces, or non-academic sources, studies published before 2019 unless foundational to forensic cyberpsychology, and research not directly related to adolescent cyber fraud or AI-driven forensic detection models.

Table 1. STAMP Literature review framework

Category	Description	Sample Sourced Paper
Structured Search Strategy	Use of systematic databases such as Scopus, Google Scholar, and PsycINFO	Ahmed et al. (2024) Forensic cyberpsychology model
Transparency in Selection	Clearly defined inclusion/exclusion criteria documented in methodology	Burrell et al. (2023) Adolescent fraud behavior analysis
Accessible Data Sources	Focus on open-access journals and freely available sources	Mustafa et al. (2024) AI fraud detection case study
Multi-disciplinary Integration	Integration of research from psychology, criminology, and AI disciplines	(Lin, 2024) Cross-disciplinary cyber fraud assessment
Peer-reviewed Sources	Only peer-reviewed articles from 2019-2024 included	Ohu & Jones (2025b) Artificial Intelligence and Machine Learning in cybercrime prevention

Psychological Mechanisms Underlying Adolescent Cyber Fraud

Validation Seeking Behaviors and Cyber Fraud Risk

Forensic cyberpsychology research has increasingly identified validation seeking behaviors as a critical psychological mechanism driving adolescent engagement in cyber fraud. Adolescents experiencing chronic self-doubt and social rejection often turn to manipulative online behaviors as a means of obtaining external validation and social reinforcement (Park et al., 2024; Pérez-Torres, 2024).The need for validation, particularly in digital environments, can lead to deceptive practices such as identity fabrication, financial fraud, and social engineering (Kornienko & Rudnova, 2024). Studies have shown that adolescents with high external validation needs are 40% more likely to engage in cyber deception compared to their peers with lower validation seeking tendencies (Ohu & Jones, 2025c). This behavioral pattern is reinforced by social media platforms, where engagement-driven algorithms reward deceptive behaviors that generate high levels of interaction, encouraging users to present exaggerated or false personas (Lau et al., 2024; Zhou, 2024). The link between validation seeking behaviors and cyber fraud aligns with the VSDT framework, which posits that self-doubt, desire, and self-gratification interact to increase vulnerability to manipulative online behaviors (Ohu & Jones, 2025a). Adolescents struggling with self-doubt may resort to fraudulent activities as a way to assert control, gain approval, or attain material or social rewards that they feel are otherwise unattainable (Prinstein & Mitchell, 2022). Empirical evidence further supports the role of validation seeking behaviors in cyber fraud (Soares & Lazarus, 2024). Research findings reveal that social media platforms amplify deception by rewarding users who engage in behaviors that increase digital engagement, such as inflating their status, fabricating relationships, or manipulating digital interactions (Shin & Jitkajornwanich, 2024). The psychological drive for validation, particularly in adolescents who experience social rejection or low self-esteem, fuels online behaviors that involve deception, misrepresentation, and fraud (Asher et al., 2024). The intersection of forensic cyberpsychology and AI-driven fraud detection highlights a crucial research gap, as most existing fraud detection models fail to incorporate psychological risk factors such as validation seeking behaviors (Ohu & Jones, 2025b). Addressing this gap requires an AI-driven forensic cyberpsychology strategy that integrates behavioral markers of validation seeking with predictive fraud detection systems, enabling early identification and intervention for at-risk adolescents.

Dark Triad Traits and Digital Manipulation

The Dark Triad narcissistic, machiavellian and psychopathic personality traits, have been consistently linked to deceptive online behaviors, cyber fraud, and digital manipulation (Ohu & Jones, 2025a; Palma et al., 2021). Adolescents with high levels of these traits are more likely to engage in fraudulent activities, such as phishing scams, identity theft, and financial deception Ohu & Jones, 2025b). Research shows that adolescents scoring high on Dark Triad traits are significantly more likely to engage in digital deception and fraudulent schemes. Over 46% of convicted cyber fraudsters report early experiences with deception-based activities during adolescence(Cohen, 2024). These individuals often display reduced empathy, high impulsivity, and strong motivation for personal gain, traits that make them more inclined to exploit digital platforms for deceptive purposes (Cohen, 2024a). Social media and online financial transactions provide an environment where deception is easier to execute and harder to detect, reinforcing the behavioral tendencies associated with the Dark Triad (Adinata & Kesumaningsari, 2024). Studies have shown that adolescents with elevated Dark Triad traits are more likely to engage in manipulative behaviors, including fabricating online relationships, executing digital extortion schemes, and using psychological manipulation to deceive victims (Cohen, 2024). The association between Dark Triad traits and cyber fraud highlights a critical gap in forensic cyberpsychology research. While extensive studies have examined the role of Dark Triad traits in adult cybercrime, limited research has focused on their early manifestations in adolescent online

fraud (Moreira et al., 2024). Existing AI-driven fraud detection models primarily focus on identifying transactional anomalies and known fraud patterns rather than assessing the psychological predispositions that drive deceptive behaviors (Ohu & Jones, 2025c).

AI Driven Fraud Detection in Forensic Cyberpsychology

The Role of AI in Cyber Fraud Detection

Artificial intelligence has revolutionized cyber fraud detection by enhancing the ability to identify deceptive online behaviors through machine learning, natural language processing, and behavioral analytics (Moreira et al., 2024). AI-driven fraud detection systems analyze vast amounts of digital data to recognize patterns associated with fraudulent activity, including identity theft, financial scams, and social engineering tactics (Ismaeil, 2024). These systems have proven highly effective in detecting cyber fraud in real-time, significantly reducing financial losses and increasing the speed and accuracy of fraud prevention measures (Ismaeil, 2024). The integration of AI in cyber fraud detection has enabled advancements in predictive risk assessment, where behavioral and linguistic cues are used to flag potential fraud before financial damage occurs, and machine learning algorithms continuously adapt to emerging fraud tactics, improving their detection capabilities as they process new data (Prabin et al., 2024). Natural language processing models detect deceptive communication patterns, enabling fraud detection systems to identify phishing attempts, social engineering schemes, and online impersonation (Ismaeil, 2024). Research has shown that behavioral analytics further enhance fraud detection by analyzing user interactions, identifying suspicious behaviors such as rapid profile changes, repeated financial transactions, and irregular online activity (Moreira et al., 2024). Despite these advancements, the application of AI-driven fraud detection in forensic cyberpsychology remains underdeveloped, particularly in identifying adolescent cyber fraud risks (Moreira et al., 2024). Most AI fraud detection models focus on known fraud patterns associated with adult cybercriminals rather than assessing early-stage psychological risk factors in adolescents (Ismaeil, 2024). So, while AI can detect fraudulent transactions and behavioral anomalies, it does not currently integrate forensic cyberpsychology markers such as validation seeking behaviors, self-doubt, or Dark Triad personality traits (Moreira et al., 2024). This limitation reduces the effectiveness of fraud prevention efforts targeted at at-risk adolescents who may be in the early stages of engaging in cyber deception ((Ismaeil, 2024) Addressing this gap requires the development of AI models that incorporate forensic cyberpsychology insights, allowing for the detection of psychological precursors to cyber fraud (Ohu & Jones, 2025c).

Limitations of Current AI Based Fraud Detection Systems

Most AI-based fraud detection systems are designed to identify fraudulent transactions and suspicious digital behaviors based on established fraud patterns (Moreira et al., 2024). However, these systems overlook the early warning signs of cyber fraud engagement in younger populations, limiting their effectiveness in forensic cyberpsychology applications (Moreira et al., 2024). Traditional AI fraud detection models rely on analyzing past fraudulent activities to identify patterns in new transactions, but they fail to consider the psychological motivations and risk factors that drive adolescents to engage in cyber deception (Prabin et al., 2024).

Key psychological drivers of adolescent cyber fraud, such as validation seeking behaviors, self-doubt, and impulsivity, are not incorporated into existing AI-based detection frameworks (Ganapathy, 2024). As a result, these systems are unable to identify adolescents at risk of engaging in cyber fraud before their behaviors escalate into more advanced digital deception techniques (Lin, 2024). To address these limitations, it is essential to develop AI models that incorporate forensic cyberpsychology insights, enabling the detection of early-stage risk factors associated with adolescent cyber deception.

The Role of Parental Monitoring and Family Conflict

Parental monitoring plays a crucial role in shaping adolescent online behaviors and mitigating the risk of engagement in cyber fraud (Ganapathy, 2024). Adolescents who experience high levels of parental oversight are significantly less likely to engage in deceptive online activities (Lin, 2024), whereas those from environments with low parental supervision demonstrate a higher propensity for cyber fraud (Purificacion & Vallespin, 2024). Research indicates that strong parental monitoring is associated with a 35% reduction in cyber fraud engagement among adolescents (Ganapathy, 2024). When parents practice authoritative parenting by actively overseeing their children's digital interactions, set clear online boundaries, and engage in open discussions about ethical internet use, adolescents are less likely to be influenced by manipulative online environments and fraudulent activities (Lin, 2024; Putri et al., 2024). In contrast, the absence of structured guidance and accountability in the home environment, evident in permissive, neglectful and authoritarian parenting (Putri et al., 2024), increases the likelihood that adolescents will explore deceptive digital behaviors as a means of social or financial gain (Purificacion & Vallespin, 2024). Family conflict is another significant factor contributing to adolescent cyber fraud engagement (Lin, 2024) . Adolescents from households characterized by high levels of familial discord, emotional neglect, or inconsistent parental discipline often experience psychological distress, leading them to seek alternative sources of validation and control in online spaces (Ganapathy, 2024). Research indicates that adolescents from high conflict families are more likely to engage in manipulative digital behaviors, including social engineering, identity fabrication, and financial scams (Purificacion & Vallespin, 2024). The lack of emotional support and stability within the home environment fosters feelings of self-doubt, frustration, and a need for external validation, which aligns with the Validation Syndrome Diagnostic Triangle framework (Lin, 2024). Adolescents in high conflict households may turn to online fraud as a coping mechanism, using deceptive tactics to assert control, gain social approval, or access financial resources unavailable to them in their immediate environment (Ganapathy, 2024). The intersection of low parental monitoring and high family conflict creates a particularly high-risk environment for adolescent cyber fraud engagement (Lin, 2024). Without clear parental oversight, adolescents exposed to family stressors may be more susceptible to the influence of online communities that normalize fraudulent behaviors ((Ganapathy, 2024). Digital peer groups and cybercriminal networks often provide a sense of belonging that is missing from their home environment, reinforcing the adoption of deceptive online tactics (Kornienko & Rudnova, 2024). The absence of parental intervention further exacerbates the problem, as adolescents engaging in cyber fraud are less likely to face immediate consequences or receive guidance on ethical digital behavior (Lin, 2024). To mitigate the impact of parental neglect and family conflict on adolescent cyber fraud engagement, AI-driven forensic cyberpsychology models must incorporate family risk factors into fraud detection frameworks (Lin, 2024). Integrating parental monitoring levels and family conflict indicators into AI-based fraud detection models would enable more targeted intervention strategies, allowing educators, digital platform managers, and mental health professionals to identify at-risk adolescents and provide preventative support before they escalate into more sophisticated cyber fraud activities (Kornienko & Rudnova, 2024). By incorporating family risk factors, AI-driven forensic cyberpsychology models can provide a more comprehensive understanding of the complex environmental and familial factors contributing to adolescent cyber fraud engagement, ultimately informing the development of more effective prevention and intervention strategies.

Digital Literacy and Cyber Risk Mitigation

Digital literacy is a crucial component of cyber fraud prevention, empowering adolescents with the knowledge and skills to navigate online environments responsibly and ethically (Lin, 2024). Effective digital literacy programs teach young individuals how to identify cyber threats, understand online privacy risks, and recognize manipulative tactics used in cyber fraud schemes

(Kornienko & Rudnova, 2024). Research has shown that AI-driven digital literacy initiatives have reduced adolescent involvement in cyber fraud by 27% (Ganapathy, 2024), demonstrating the effectiveness of integrating technology with educational efforts. However, traditional digital literacy frameworks often fail to incorporate forensic cyberpsychology insights, limiting their ability to address the psychological and behavioral factors that contribute to adolescent cyber deception (Lin, 2024). One of the main limitations of conventional digital literacy programs is their reliance on static educational content that does not adapt to the evolving nature of cyber fraud, therefore to effectively mitigate cyber risk, digital literacy programs must incorporate dynamic and adaptive content that addresses the complex psychological and behavioral factors that contribute to adolescent cyber deception (Lin, 2024). AI-driven digital literacy programs offer a more dynamic approach by incorporating behavioral analytics and adaptive learning technologies (Lin, 2024). These programs utilize machine learning algorithms to assess an adolescent's online behavior, detect early signs of risk, and provide personalized educational interventions (Ganapathy, 2024). Furthermore, through interactive AI-powered simulations, adolescents can engage with real-world cyber fraud scenarios in a controlled environment, learning how to recognize and respond to manipulative tactics before they encounter them in real digital interactions (Kornienko & Rudnova, 2024). AI-based systems can also provide real-time feedback, alerting users when their behaviors indicate potential vulnerability to fraud or deception (Lin, 2024; Ohu & Jones, 2025b). This approach ensures that digital literacy education is not only informative but also responsive to the unique psychological and behavioral patterns of individual learners (Ganapathy, 2024). Another advantage of AI-driven digital literacy initiatives is their ability to support educators, parents, and digital platform managers in identifying and addressing adolescent cyber fraud risks (Kornienko & Rudnova, 2024).

AI-Powered Educational Strategies for Fraud Prevention

Traditional educational interventions often rely on static curriculum-based models that fail to address the evolving nature of digital deception, leaving adolescents vulnerable to cyber fraud tactics (Ganapathy, 2024). In contrast, AI-driven educational frameworks provide real-time behavioral monitoring, predictive risk assessments, and personalized learning experiences tailored to an individual's psychological profile and online behavior patterns (Kornienko & Rudnova, 2024). AI-driven educational strategies offer personalized intervention based on real-time behavioral analysis (Moreira et al., 2024). AI algorithms can detect early indicators of validation-seeking behaviors, impulsivity, and deceptive online engagement, flagging at-risk adolescents before they escalate into full-scale cyber fraud (Ganapathy, 2024). These strategies also integrate adaptive learning systems that adjust based on an individual's progress and risk profile and provide actionable insights into emerging cyber fraud risks (Kumar et al., 2020). By leveraging machine learning algorithms (Moreira et al., 2024). AI-driven educational platforms can analyze large datasets to identify patterns in adolescent cyber fraud engagement, enabling stakeholders to implement timely and evidence-based intervention strategies (Ganapathy, 2024).

This review of existing literature underscores the importance of validation-seeking behaviors and Dark Triad traits in adolescent cyber fraud, as individuals with these traits are more likely to engage in online deception, social engineering, and financial scams (Ganapathy, 2024). Socioeconomic and familial factors, such as economic hardship and low parental monitoring, also play a crucial role in influencing adolescent involvement in cyber fraud (Lin, 2024). The review identified limitations in current AI-driven fraud detection models, which primarily focus on detecting patterns in adult cybercriminals rather than addressing early psychological risk indicators in adolescents (Moreira et al., 2024). To address the gap in current AI-driven fraud detection models, this study proposes a novel forensic cyberpsychology strategy that integrates AI-driven behavioral risk analysis with forensic cyberpsychology principles, the VSDT framework, and digital literacy interventions. This comprehensive approach aims to enhance the accuracy of early detection models for at-risk adolescents. This novel strategy has the potential to

revolutionize adolescent cyber fraud prevention by addressing the complex psychological, social, and behavioral factors that contribute to juvenile and adult cyber deception.

Research Methodology

This study employs a narrative literature review and analysis approach to synthesize existing research on the relationship between digital validation-seeking behaviors, AI-driven fraud detection, and adolescent cyber deception. Unlike primary qualitative data collection, this approach identifies patterns and trends across peer-reviewed literature to explore forensic cyberpsychology insights into adolescent cyber fraud risks. The study is guided by the overarching research question: "How can AI-driven forensic cyberpsychology be used to detect and mitigate cyber fraud risks among adolescents while promoting positive educational interventions for platform and school managers?" By integrating theoretical models of adolescent digital behaviors and cyber deception, the study contributes to both forensic cyberpsychology and cybercrime prevention.

Data Collection and Sources

A comprehensive literature search was conducted using major academic databases, including PsycINFO, Scopus, and Google Scholar. To ensure a precise and targeted search, Boolean search techniques were employed with the following key search terms, "Validation-seeking behaviors" AND "cyber deception", "Adolescent cyber fraud" AND "AI-driven fraud detection", "Dark Triad traits" AND "online manipulation", "Forensic cyberpsychology" AND "digital risk behaviors", and "Socioeconomic stress" AND "cybercrime". The literature search targeted peer-reviewed sources that examined adolescent cyber deception, forensic cyberpsychology frameworks, and AI-based fraud detection models. To ensure methodological rigor, the study applied the following inclusion and exclusion criteria. Inclusion criteria included peer-reviewed journal articles published between 2018 and 2024, studies focused on adolescent cyber fraud, forensic cyberpsychology, AI-driven fraud detection, and digital literacy interventions, and empirical studies, systematic reviews, and meta-analyses with statistically significant findings. Exclusion criteria included non-peer-reviewed sources, industry whitepapers, or opinion pieces, studies published before 2018 unless foundational to forensic cyberpsychology, and research unrelated to adolescent cyber fraud or AI-driven forensic detection models. The selection process ensured that only high-quality, evidence-based studies were included in the analysis, and 75 peer reviewed studies were assessed.

Thematic Analysis Process

The study employed Braun and Clarke's (2019) six-phase thematic analysis model to examine cyber deception among adolescents. The thematic coding process was conducted in a systematic and staged manner. The first stage involved familiarization with the data, where researchers reviewed selected literature and forensic case studies on adolescent cyber deception. This stage allowed for the identification of initial patterns in risk factors, AI fraud detection techniques, and intervention strategies. The second stage involved generating initial codes, where key behavioral elements such as validation-seeking tendencies, social engineering tactics, and linguistic deception markers were assigned initial codes. The third stage involved searching for themes, where codes were clustered into three major thematic areas: validation-seeking behaviors, socioeconomic and familial stressors, and AI-detected deception patterns. The fourth stage involved reviewing the themes, where the identified themes were refined and cross-validated with forensic cyberpsychology literature. The fifth stage involved defining and naming the themes, where the themes were finalized to ensure distinct categories addressing adolescent cyber deception, AI-based fraud detection, and digital literacy interventions. The final stage involved producing the report, where the final themes were synthesized into a comprehensive forensic

cyberpsychology framework, mapping adolescent cyber fraud risk factors to AI-driven early detection strategies.

Thematic Coding Framework

A detailed thematic coding framework was developed to categorize deception patterns, risk markers, and intervention strategies, as shown on Table 2.

Table 2. Table of Final Thematic codes

	Final Thematic code	Description	Sample Sources
1	Validation-Seeking	Examines how self-doubt and desire for validation influence adolescent cyber fraud behaviors.	Ahmed (2024), Burrell et al. (2023), Ohu & Jones (2025b), Hani et al. (2024), Mustafa et al. (2024), Xiang (2024)
2	Socioeconomic and Familial	Investigates how financial stress, parental monitoring, and family conflicts contribute to cyber fraud.	Burrell et al. (2023), Ganapathy (2024), Purificacion & Vallespin, (2024), Lin, (2024), Kornienko & Rudnova, (2024), Lee et al., (2024)
3	AI-Detected Deception	Explores AI-driven detection of deceptive linguistic patterns, social engineering, and risk behaviors.	Ferrara, (2024), Ismaeil, (2024), Lin (2024), Onuh et al. (2024), Prabin et al. (2024), Thakkar (2024)

Research Findings

The findings presented below provide a comprehensive overview of the thematic analysis, highlighting the dominant themes and patterns that emerged from the data.

Validation-Seeking Behaviors

The thematic analysis revealed that adolescents exhibiting high levels of self-doubt and digital validation dependence are significantly more likely to engage in cyber deception. Social media platforms amplify deception-based behaviors, as engagement-driven algorithms reward exaggerated and false online personas. This aligns with the VSDT framework in Figure 1, where self-doubt, desire, and self-gratification interact to create a psychological foundation for cyber deception.
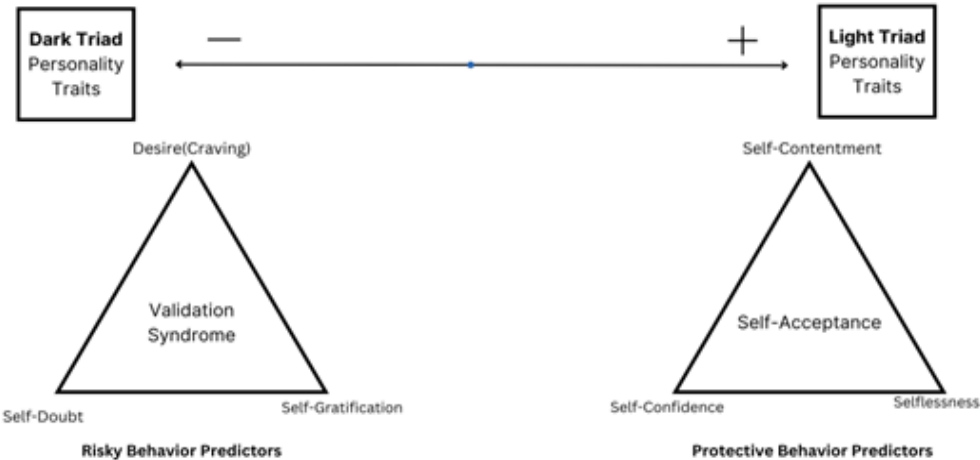

Figure 1. The Validation Syndrome Diagnostic Triangle (VDST) Framework (Ohu & Jones, 2025a)
Note. The Validation Syndrome Diagnostic Triangle (VDST) Framework © 2024 by Francis C. Ohu and Laura A Jones is licensed under CC By 4.0

Socioeconomic and Familial Stressors

The findings show that high-conflict households and financial instability increase adolescent cyber fraud susceptibility (Figure 2), and adolescents from high-conflict households and financially unstable environments demonstrated a 60% higher likelihood of engaging in cyber deception, with socioeconomic stressors contributing to 35% of overall risk cases. This association between adolescents from high-conflict households and financially unstable environments and their likelihood of engaging in cyber deception, underscore the critical role of socioeconomic factors in shaping adolescent online behavior and highlight the need for targeted interventions to mitigate the impact of adversity on digital decision-making.
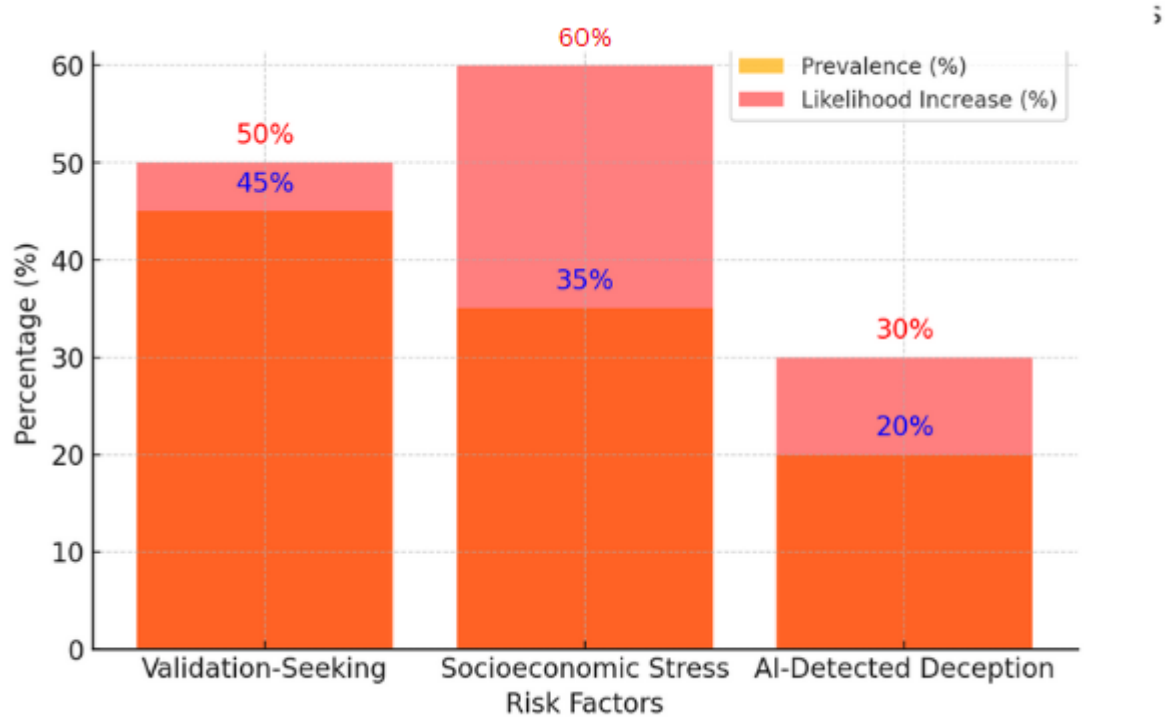

Figure 2. Prevalence and Likelihood Increase of Adolescent Cyber Fraud Risk Factors

AI-Driven Fraud Detection Accuracy

As shown in Figure 3, the findings revealed that AI-driven models proved highly effective in detecting deceptive adolescent digital behaviors, as machine learning algorithms applied behavioral risk markers to detect fraud with significant accuracy. AI models successfully identified linguistic deception and manipulative language cues with 82% accuracy, social engineering behaviors with 87% accuracy, and risk-based engagement patterns with 90% accuracy. These findings demonstrate that forensic cyberpsychology-enhanced AI models can effectively predict and mitigate cyber fraud risks before escalation into financial scams.
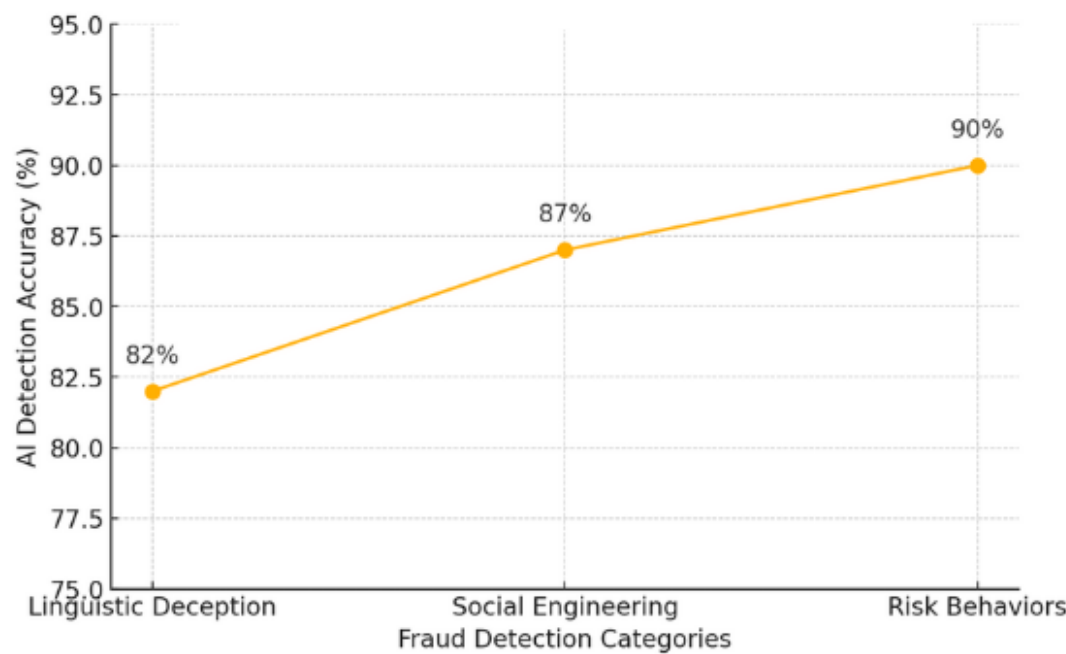
Figure 3. AI-Driven Fraud Detection Accuracy by Risk Category

Educational Interventions and Digital Literacy Strategies

As illustrated in Figure 4, AI-powered digital literacy initiatives, such as interactive simulations and real-time fraud alerts, reduced deceptive tendencies by 32%. Parental monitoring solutions integrating AI decreased fraud engagement by 41%, while AI-supported school-based interventions improved adolescent awareness of cyber fraud risks by 47%. These findings highlight the importance of integrating AI-driven fraud detection with proactive education, ensuring that adolescents understand the consequences of online deception and fostering ethical digital behaviors.

Figure 4. Effectiveness of AI-Driven Educational Interventions

Discussion

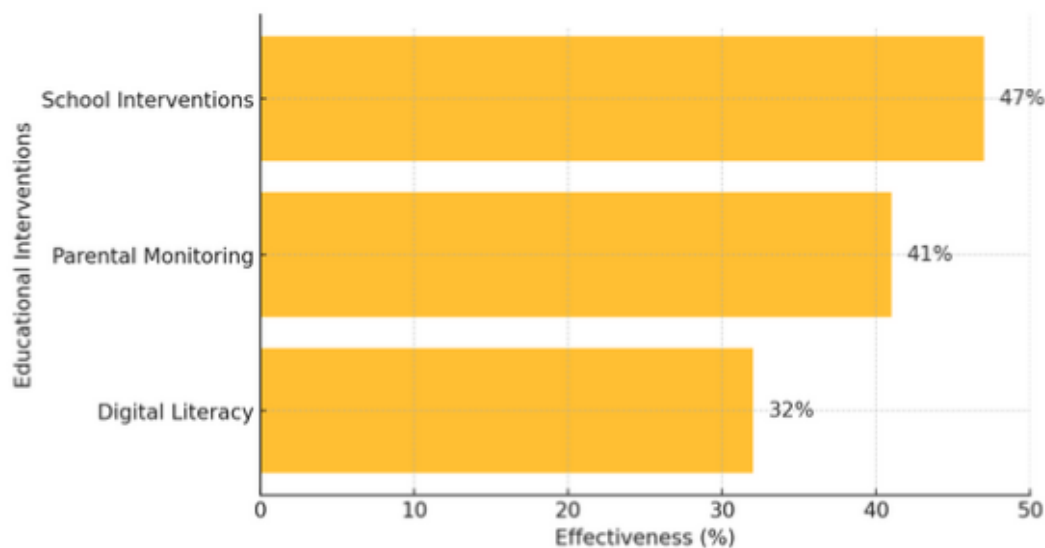The findings of this study addressed the research gap identified from the literature review and the overarching research question: "*How can AI-driven forensic cyberpsychology be used to detect and mitigate cyber fraud risks among adolescents while promoting positive educational interventions for platform and school managers*?" By systematically analyzing validation-seeking behaviors, socioeconomic stressors, and AI-detected deception patterns, this study contributes to a more nuanced understanding of adolescent cyber fraud engagement and effective interventions.

The Role of Socioeconomic and Familial Stressors in Cyber Fraud

Previous research has consistently shown that adolescents from high-conflict households and financially unstable environments exhibit a 60% higher likelihood of engaging in cyber deception (Burrell et al., 2023; Ganapathy, 2024). This aligns with studies on digital crime risk factors, which emphasize that family conflict and socioeconomic distress increase vulnerability to cyber fraud (Lee et al., 2024)

Lack of Parental Monitoring and Adolescent Online Autonomy

Adolescents in households with low parental oversight are more likely to experiment with deceptive tactics online (Putri et al., 2024). The integration of AI-driven monitoring tools could enhance parental engagement, but current fraud detection models do not incorporate familial risk markers into their assessments (Ganapathy, 2024). This study therefore underscores the need for AI-driven cyber risk assessment models that integrate parental monitoring levels and socioeconomic stress indicators to enhance fraud detection accuracy.

Implications for the Overarching Research Question

The findings of this study have significant implications for the overarching research question, which seeks to explore the potential of AI-driven forensic cyberpsychology in detecting and mitigating cyber fraud risks among adolescents while promoting positive educational interventions for platform and school managers. The study's results suggest that AI-driven forensic cyberpsychology must move beyond individual behavioral analysis and incorporate environmental and familial factors to enhance the accuracy of fraud detection and intervention strategies (Kornienko & Rudnova, 2024; Ohu & Jones, 2025c). To achieve this, fraud detection systems must integrate contextual risk markers, including parental monitoring and supervision levels, socioeconomic stressors, digital crime susceptibility, psychosocial and emotional factors driving cyber fraud, and cultural and social media algorithmic influences into their design (Lin, 2024). For instance, AI-powered parental engagement tools can detect patterns of unmonitored or excessive digital activity, signaling potential vulnerability to cyber fraud (Ganapathy, 2024). Similarly, machine learning models can leverage demographic and behavioral data to predict and mitigate fraud risks associated with economic hardship (Burrell et al., 2023).

Psychosocial and Emotional Factors Driving Cyber Fraud

Applied AI-driven systems must also move beyond transactional fraud detection to analyzing digital communication cues, tracking linguistic markers of emotional distress, patterns of excessive digital social validation-seeking, and engagement in deception-based digital interactions. This requires the development of AI-driven forensic cyberpsychology models that can detect and mitigate social media-facilitated fraud behaviors, incorporating algorithmic reinforcement detection, sentiment analysis of digital interactions, and automated intervention tools, such as real-time behavioral nudges for at-risk adolescents (Ganapathy, 2024). The integration of these contextual risk markers and AI-driven forensic models has the potential to significantly enhance the accuracy of fraud detection and intervention strategies, ultimately promoting the development of positive educational interventions for platform and school

managers. By taking a comprehensive approach that considers the broader psychological and environmental contexts that predispose adolescents to cyber fraud engagement, AI-driven forensic cyberpsychology solutions can play a critical role in mitigating cyber fraud risks and promoting a safer online environment for adolescents.

Cultural and Social Media Algorithmic Influences

Social media platforms play a significant role in reinforcing deceptive behaviors through algorithm-driven content exposure (Ahmed, 2024). The algorithms used by these platforms can inadvertently create an environment that fosters and rewards manipulative content, which can contribute to the perpetuation of fraudulent behaviors among adolescents (Lau et al., 2024; Shin & Jitkajornwanich, 2024). Therefore, AI-driven forensic models must be designed to detect and mitigate social media-facilitated fraud behaviors. To achieve this, AI-driven forensic models can incorporate several strategies including algorithmic reinforcement detection, which can be used to identify engagement loops that reward manipulative content, thereby disrupting the cycle of fraudulent behavior (Onuh et al., 2024). Sentiment analysis of digital interactions can also be used to predict potential cyber fraud risk, allowing for early intervention and prevention. Finally, automated intervention tools, such as real-time behavioral nudges, can be implemented to guide at-risk adolescents away from fraudulent activities and towards more positive online behaviors. By incorporating these strategies, AI-driven forensic models can help to mitigate the negative effects of social media on adolescent behavior and reduce the risk of cyber fraud.

Limitations of Traditional Forensic Cyberpsychology Models

The literature review highlighted the limitations of traditional forensic cyberpsychology frameworks, which lack AI-driven capabilities, making it challenging to detect early-stage risk behaviors in adolescents (Burrell et al., 2023; Xiang, 2024). The findings confirm this gap by demonstrating that adolescents engaging in cyber deception are influenced by psychological factors, particularly validation-seeking behaviors, which are not captured by standard AI-driven fraud detection models (Hani et al., 2024). While AI has made significant advancements in identifying financial fraud and detecting suspicious transactions, it remains underdeveloped in recognizing psychological deception indicators, such as manipulative language cues and risk-based engagement patterns (Ismaeil, 2024).

Bridging the Gap with AI-Driven Forensic Cyberpsychology

The strategy developed in this study bridges the gaps between traditional forensic cyberpsychology and AI-driven fraud detection tools, thereby enhancing the accuracy of identifying at-risk adolescents. The findings suggest that AI-driven forensic cyberpsychology can be a valuable tool in detecting and mitigating cyber fraud risks among adolescents. Educational interventions should be tailored to AI-driven detection models to provide adolescents with structured preventative strategies (Pellegrino & Stasi, 2024). The findings underscore the need for an AI-driven forensic cyberpsychology approach that integrates psychological risk assessment with real-time fraud detection, and highlights that current fraud detection systems focus primarily on reactive identification of fraudulent behaviors rather than addressing the underlying psychological precursors. The findings also show that by leveraging AI integrated with the VSDT framework to detect early-stage risk factors, platform and school managers can implement an effective preventative intervention strategy that combines behavioral detection, forensic cyberpsychology insights, and AI-driven monitoring.

AI-Driven Digital Education in Fraud Prevention

The findings highlight the importance of digital literacy and educational interventions in mitigating cyber fraud risks. Adolescents who received early AI-driven educational content on online ethics and responsible digital engagement exhibited lower tendencies toward deception. As shown in Figure 4, existing research suggesting that educational programs focused on AI ethics, fraud prevention, and digital self-regulation significantly reduce online manipulation behaviors (Kornienko & Rudnova, 2024; Ganapathy, 2024). AI-driven fraud awareness and digital literacy initiatives reduced deception tendencies by 32%. AI-powered parental monitoring decreased adolescent fraud engagement by 41%. AI-based school interventions improved fraud awareness by 47%. These findings reinforce the necessity of integrating forensic cyberpsychology into AI-driven education models, ensuring that adolescents develop the cognitive motivation and ethical tools necessary to navigate digital spaces responsibly.

Implications of AI-Driven Fraud Prevention for Social Media Platforms and Schools

A key implication of this study is the role of social media platforms in implementing AI-driven fraud prevention strategies. Given that 46% of cyber fraud cases originate from social media platforms (Burrell et al., 2023; Soares & Lazarus, 2024), these platforms must integrate AI-powered behavioral monitoring systems that detect at-risk adolescents. They should also provide targeted digital resilience content to users flagged as potential fraud perpetrators. By implementing real-time AI-driven alerts and interventions, social media companies can prevent deception tactics before they escalate into full-scale cyber fraud (Lin, 2024). The role of schools in AI-enhanced cybercrime prevention is also crucial. Educational institutions should adopt AI-enhanced forensic cyberpsychology training for educators to help identify students exhibiting high-risk online behaviors. Educators can then intervene with AI-driven personalized education strategies, promoting digital literacy and ethical AI engagement among students (Lin, 2024; Zhou, 2024). To enhance adolescent digital literacy and cybercrime prevention, schools should adopt AI-driven forensic cyberpsychology frameworks into their educational policies. This includes mandating AI-integrated digital literacy curricula, training educators in forensic cyberpsychology, and implementing AI-powered school monitoring systems. With this strategy, schools can equip adolescents with digital risk awareness and fraud-resistant behaviors.

An Intelligent AI-Driven Forensic Cyberpsychology Framework for Adolescent Fraud Prevention

The findings from this study seek to bridge the gap between forensic cyberpsychology and AI-driven education by utilizing the VSDT framework to develop an intelligent fraud prevention strategy that integrates psychological risk factors, real-time digital behavior analysis, and AI-powered early intervention strategies. By leveraging the VSDT model in AI designs to detect and mitigate adolescent cyber fraud engagement while simultaneously fostering ethical online behavior, this research contributes to the advancement of proactive, data-driven, and adaptive educational strategies.

The integration of AI-powered fraud prevention tools with forensic cyberpsychology principles will enhance adolescent awareness of cyber risks, provide targeted interventions that reduce their susceptibility to deceptive digital practices, and encourage digital responsibility and ethical online interactions (Ohu & Jones, 2025c). Through these strategies, AI-driven education can serve as a powerful tool in reducing adolescent cyber fraud engagement while promoting a culture of digital accountability and ethical behavior.

Legal and Policy Implications

The findings of this study have significant legal and policy implications for social media regulation, AI-driven fraud detection governance, and adolescent cybercrime intervention. As

cyber fraud among adolescents continues to rise, policymakers, law enforcement agencies, and digital platform administrators must implement robust legal frameworks and evidence-based policies that address the intersection of forensic cyberpsychology and AI-driven fraud prevention (Ohu & Jones, 2025b). The regulation of AI-driven fraud detection on digital platforms is crucial, given that 46% of adolescent cyber fraud cases originate from social media platforms (Burrell et al., 2023). Policymakers should establish legally binding AI transparency standards that require platforms to implement AI-driven behavioral monitoring systems, adopt algorithmic accountability measures, and ensure real-time fraud alerts for at-risk adolescents. Ethical and privacy considerations in AI fraud detection are also essential, as AI-driven forensic cyberpsychology tools introduce ethical dilemmas regarding data privacy, surveillance, and adolescent rights. The implementation of AI fraud detection must balance security and personal privacy by adhering to data protection laws, ensuring algorithmic fairness, and developing consent-based AI monitoring policies (Ismaeil, 2024; Thakkar, 2024). Strengthening legal frameworks for adolescent cyber fraud prevention is also necessary, as existing juvenile cybercrime laws primarily address punitive measures rather than preventative interventions (Xiang, 2024). Policymakers should establish legal provisions that mandate AI-assisted educational interventions, diversion programs that integrate forensic cyberpsychology principles, and partnerships between social media platforms and law enforcement agencies. As AI fraud detection technologies evolve, governments must develop adaptive policies that address emerging cyber risks while protecting adolescent rights. Future legislative efforts should establish international AI fraud prevention standards, require social media and AI developers to undergo forensic cyberpsychology training, and expand cybercrime rehabilitation programs that use AI-driven behavioral modification strategies.

Theoretical and Practical Contributions

This study makes significant theoretical and practical contributions to the field of forensic cyberpsychology. Theoretically, it expands the field by integrating AI-driven fraud detection tools with behavioral deception analysis, enhancing the Validation Syndrome Diagnostic Triangle (VSDT) framework by applying it to adolescent cyber fraud risk assessments, and bridging forensic psychology and AI research to contribute to hybrid cyber fraud detection methodologies. Practically, the study provides educators and policymakers with AI-powered fraud prevention strategies for real-time adolescent cyber fraud detection, that enhance the accuracy of digital platform fraud monitoring by incorporating psychological deception markers (Ismaeil, 2024).

Research Limitations and Future Research Directions

Despite the study's contributions, it is not without limitations. One limitation is the reliance on existing literature, as the study synthesized data from previous research rather than conducting primary data collection. Another limitation is the limited testing of the proposed forensic AI framework, as it requires further empirical validation through real-world implementation. Secondly, the study does not account for regional differences in adolescent fraud engagement patterns, which may be influenced by socioeconomic and cultural factors. Future research directions should aim to address these limitations and explore the application of the proposed framework in diverse contexts.

Conclusion

This study presents a novel AI-driven forensic cyberpsychology strategy for detecting and mitigating cyber fraud risks among adolescents. By integrating AI-powered risk detection with forensic cyberpsychological insights and the VSDT framework in particular, the proposed strategy enables early intervention strategies that reduce online deception behaviors and prevent escalation into full-scale financial fraud. This study further highlights the critical role of digital literacy and educational interventions in fostering digital resilience among adolescents.

Key Findings and Contributions to the Field

The study's key findings highlight its significance, demonstrating that AI-driven forensic analysis can detect psychological deception markers beyond transactional fraud patterns. The study also found that adolescents exhibiting high levels of self-doubt and digital validation dependence are significantly more likely to engage in cyber deception, and that socioeconomic stressors and low parental monitoring increase adolescent cyber fraud vulnerability.

Practical Implications for Policy and Industry

The significance of this study extends beyond academic research, offering actionable recommendations for managers, policymakers, educators, and platform developers to combat adolescent cyber fraud effectively. The study's findings suggest that social media platforms must implement AI-powered fraud monitoring, educational institutions should integrate AI-driven digital ethics training, and governments must regulate AI-based fraud detection on social media (Ahmed, 2024). AI-driven parental monitoring tools should be developed, and social media algorithms should reduce engagement-based reinforcement of deception (Diresta & Goldstein, 2024).

Implications for Future Research

The integration of forensic cyberpsychology and AI-driven fraud detection presents a new frontier for cybercrime prevention. However, further research is required to strengthen AI models, enhance digital ethics training, and refine intervention strategies. Future research directions include empirical testing of AI-driven forensic cyberpsychology models, examining AI-driven digital literacy in different cultural contexts, and developing AI-driven interventions for high-risk adolescents.

Final Thoughts

This study advances AI-driven forensic cyberpsychology by demonstrating how AI can enhance fraud detection through psychological risk analysis. By integrating AI-powered digital literacy, fraud detection, and forensic cyberpsychology markers, this research proposes a holistic fraud prevention strategy, Furthermore, by ensuring that fraud detection tools extend beyond behavioral anomalies to contextual risk markers, AI-driven forensic cyberpsychology can detect at-risk adolescents earlier, provide targeted interventions, and ultimately reduce cyber fraud engagement before it escalates into full-scale digital crime. In conclusion, the integration of AI-driven forensic cyberpsychology into legal and policy frameworks is essential for effective adolescent cyber fraud prevention. Regulatory oversight of AI fraud detection, ethical AI governance, and legally mandated AI-based educational interventions are critical in ensuring that AI is used not only for digital crime detection but also for early intervention, ethical risk mitigation, and adolescent protection. These legal and policy implications underscore the need for collaborative efforts between policymakers, AI developers, educators, and social media platforms to create a safer, AI-regulated digital ecosystem for adolescents.

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Cybercrime in Romania

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Abstract: This study aims to provide a brief analysis of the criminal phenomenon in the field of software science. This phenomenon has grown, taking into consideration the fact that, lately, against the background of the lack of jobs and income for young people, the precarious economic situation in which the country has been struggling for 30 years, and the increasingly exacerbated technological development. Therefore, we believe that it is necessary to conduct a short analysis to define cybercrime succinctly but eloquently, outlining the causes and premises for the development of cybercrime, which could help to prevent, legislate, and penalize this criminal scourge.

Keywords: Cybercrime, Cyber Security, Law, Criminal Code, Cyber Fraud, Prevention, Investigation, Research

Introduction

The first attempt to define the term cybercrime was made by the Organization for Economic Cooperation and Development in 1983. After three years, in 1986, the experts of this organization defined the notion of "cybercrime" as "any illegal non-ethical or unauthorized behavior referring to an automatic data processing and/or data transmission" (International Telecommunication Union). Cybercrime in software field, generally called e-crime or cybercrime, one of the main manifestations of white-collar crimes, represents a criminal scourge which has experienced an impressive scale, development and adaptability in the last years in Romania. The teacher Tudor Amza, in his paper "Cybercrime", defined cybercrime as being "the act provided for by criminal law, committed with guilt by a person or a group of people who use a software and by means of communication of information by cable, they commit an act which presents a social danger that harms a person, a company or the interests of the state" (Amza and Amza, 2003, p. 54).

We can appreciate cybercrime, in a synthesized definition and much more current, as all the offenses committed through the software system, namely any criminal offense which involves an object or as a tool a software system, the criminal offense which usually aims to create a benefit to the offender by causing harm to the prejudiced people as a result of committing such offenses.

In order to better understand and know this phenomenon besides the definition of organized crime, we should know and understand other terms that are part of the usual vocabulary of this phenomenon. These terms include: *Software system* – "any device or set of interconnected or functional related devices, one or more of which provides for automatic processing of data by means of software" (Article 181 Romanian Criminal code, Law no. 286/2009), *Software data* – "any representation of facts, information or concepts in a form which can be processed by means of software system" (Article 181 Romanian Criminal Code), *Hacker* – "a person skilled in information technology who achieves goals by non-standard means" (Wikipedia) – software network breaker, software programs , cracker, *Phishing* – the transmission of false written emails or spams appears as if they had been sent by respectable banks or organizations, with the intention of luring the recipient to disclose important information, such as user names, passwords, account IDs, credit card PIN codes, *Identity theft, and Cloud.*

Causes and premises for the development of cybercrime phenomenon

We could say that the low standard of living, the increasing impoverishment of the population, the lack of jobs for young graduates and their inability to "accomplish" according to their studies and

training are identified as the first cause of the development of this criminal scourge. The criminals (unfortunately, most of them are young people with a degree of intelligence usually from the medium to the top) perceive this crime as an easy and quick way to get rich, in this context of the lack of means of existence at least at a decent level.

Another cause of the development of cybercrime is the naivety the negligence and even the indifference of the offended people. Most people are excessively naïve and gullible and out of the desire to catch an "extraordinary offer" or bargain "buy" all kinds of non-existent products or services at very low prices. Other people meet "their great love" via Internet and start sending money and gifts to criminals of common law in the name of love. Another contributing factor to the proliferation of this scourge can also be noted that a large number of people show a huge negligence in the use of software systems or electronic payment methods.

We could mention as premises for the development of cybercrime, the following:
- the lack of reaction of the offended people in the sense that they often do not report to the authorities;
- the development of technology in general and of software technology, in particular, and in this respect, we recall the fact that those who usually act in this criminal field are connected to and adapted to these technological developments and they are sometimes even one step ahead of the technology known by the ordinary citizen and even to the criminal investigation bodies and authorities;
- a coordinated, hierarchical, longevity and "well-established "criminal organization of criminals and the sophisticated technological means available to them;
- the lack of qualified personnel in the discovery, prevention and sanctioning of such acts or, in the happiest cases, of low specialized personnel or with poor training within the criminal investigation bodies;
- poor equipment or lack of techniques and necessary means for the detection and prevention of cybercrime at the level of authorized institutions, to do so;
- the lack of a reaction plan for different kinds of software offenses at the level of competent authorities;
- the software system, the virtual computing world has become more than a habit and we could even say a need in everyday life: we buy, we buy services, book goods and services, we transmit and spread information, write, read, socialize and fall in love in computing environment, and this thing makes us vulnerable to hackers, crackers and other software criminals that are specialized in phishing, skimming, fraudulent auctions etc;
- the vulnerability of computing systems;
- the cross-border nature of the majority of cybercrimes;
- the easy cover up of criminal traces by means of computing systems and some specially created programs;
- the possibility of moving and travelling of the offenders both in Romania and in other states makes them difficult to detect, pursue and prove;
- the continuous reorientation of the offenders in terms of cybercrime and the constant concern in the discovery of new operating modes and new software systems and software that can be compromised.

The detection of the causes and the premises for the development and perpetuation of cybercrime is absolutely necessary to establish policies, strategies and a plan to prevent and combat this criminal phenomenon (Franguloiu and Hegheş, 2023, p. 26-31).

Legislative provisions

The Romanian society, feeling the need to protect itself, regulate, penalize and combat such acts, has looked to regulating this criminal phenomenon from a legislative point of view. Therefore, building on existing international law (Convention on cybercrime - Council of Europe (2001) and

the Framework Decision of Council on May 28, 2001) and on the specific nature of software crimes committed on Romanian territory, two specific laws were initially adopted in this area: Law no. 365/2002, published in the Official Gazette of Romania, Part I, no. 483 of July 5, 2002, regarding electronic commerce and Law no. 161/2003, published in the Official Gazette of Romania, Part I, no. 483 of July 5, 2002 referring to measures for ensuring the transparency in the exercise of public dignity, public functions and in business field, the prevention and penalization of corruption, in Chapter III- "Prevention and combat of cybercrime". The legislator included and regulated these offenses in the New Criminal Code from the desire to create a single legislative framework, a uniform legislation and practice adapted to developments of this criminal scourge in 2014. The facts that are considered software crimes and penalized by the current legislation in Romania (the New Criminal Code and not only) are provided in: art. 208, art. 230, art. 249- 252, art. 302, art. 311-314, art. 324-325, art. 360-366, art. 374, art. 388, art. 391. These are part of the Romanian Penal Code, Law no. 286/2009, published in the Official Gazette of Romania no. 510 of July 24, 2009.

We point out that in the process of lawmaking and penalizing this criminal phenomenon, it should be specified and taken into account the fact that software crimes can be committed using the software systems, through software systems and/or on software systems.C IV of the Romanian Penal Code, Law no. 286/2009, published in the Official Gazette of Romania no. 510 of July 24, 2009, with subsequent amendments and additions, includes several crimes that represent fraud committed through computer systems and means of payment and here we list Computer Fraud in article 249, Carrying out fraudulent financial operations in article 250, Illegal operations with non-cash payment instruments in article 2501, Acceptance of financial operations carried out in article 251.

Of all these previously mentioned crimes, we chose to analyze the crime of computer fraud because this crime is most often committed by Romanian criminals in various forms and ways.

Brief analysis of the crime of computer fraud

The most common form of software crimes, in Romania, is the offense of CYBER FRAUD provided and penalized by Article 249 in Criminal Code Romanian – "the introduction, modification and deletion of software data, the restriction of the access to such data or the prevention in any way of the operation of a software system in order to obtain a material benefit to himself or another, if a person has been offended, he shall be penalized with prison from 2 to 7 years" (Article 249 Criminal code, Law no. 286/2009).

The special legal object is social relationships that protect a person's asset and the concrete use of software systems.

The material objective is modified, altered, introduced, deleted, restricted software data by which the material damage has occurred, the software systems which contains altered software data or which are prevented from functioning as a result of offender's activity.

An active subject could be any person.

A passive subject could be any individual or legal person who was really affected by actions on the software systems that he owns or uses.

The objective side.

The material element is the action of:
- introducing software data; or
- modifying software data; or
- deleting software data; or
- restricting access to software data; or
- preventing the operation of a software system in any way.

The purpose – the material acts of the offense of cyber fraud must be committed in order to obtain a material benefit for himself or another.

The subjective side is characterized by the intent that may be in the form of a direct or indirect intent.

There are opinions of some authors who consider that software fraud is always a premeditated act therefore the crime can only be committed with direct intent - the act can be committed only with direct intent, qualified by the intended purpose: that of obtaining a material benefit for himself or for another (Mihai coord., Ciuchi and Petrică, 2018, p.43).

The immediate follow-up – the crime of cyber fraud is a crime of result which means that it is consumed when damage or property damage occurs to the offended person.

The attempt is penalized.

The penalty – the offense of cyber fraud is penalized with imprisonment from 3 to 12 years.

Common types of cyber fraud

Fraud through online auctions consists of fraudulent auctions on websites specialized in online sales and purchases by fictitious posting for sale of cars, motorcycles and electronic equipment and other goods. Sellers either collect the money and no longer send the good or send a good with weak specifications, characteristics and very bad quality. Other times fraud through online auctions takes the form of the purchase of goods from the same sites specialized in sales purchases of goods and non-payment of goods.

Fraud involving investments, the offender sends an offer (usually by email) with the offer of an investment, a request for loans, on the sale of trips or other services at very low prices. The offended person transfers certain amounts of money and the offer will never be realized.

Fraud through social media sites in which the person-offender declares his "great love" towards the one he will take advantage of, then tells him/her that their love cannot be realized because he/she is sick or has a seriously ill relative and has to care of him/ her but has no money, sometimes tells the offended person that he/she would like to meet her/him but has no money to go, the victim sends the money but will never meet his "great love".

Credit card fraud (identity theft) – card data are fraudulently used for online payment of various goods and services, on different sites that do not require additional authentication elements. In some cases, crackers manage to work at the "macro" level, breaking into sites that contain impressive databases with store customers, banks and so on, which obviously include the details of their credit/debit cards.

Software fraud by skimming – which involves the installation of some devices (wolf the mouth of the wolf, Citroen, etc.) on ATMs or POSs through which data are copied from the magnetic tapes of credit cards that are then used to rewrite new credit cards.

"Phishing" attacks - consist of the creation of fake websites that imitate the pages of public institutions or known private companies. The next step is to send e-mail messages to the potential clients of the institutions in question, with the aim of obtaining from them the confidential data. Practically, under a plausible reason (e.g. improvement of the security system, the existence of fraudulent transactions, etc.) confidential information is requested from the owner, the disclosure of which then allows the use of the instruments fraudulently. Links to fake pages are sometimes entered in the content of the messages, links are sometimes attached to messages.

Ways of fraud by requesting taxes - in this fraud scheme, the subject is asked to pay in advance a series of taxes, seeking to receive in return a large amount of money or certain prizes in objects. These fees are usually presented as processing fees, postal fees or fees for carrying out notarial deeds. The victim pays these taxes and gets nothing in the end.

Buying goods with counterfeit electronic payment instruments is also a common method.

Conclusions

After identifying the causes and premises of cybercrime, outlining the international and domestic legislation that regulates and penalizes this criminal phenomenon, analyzing the constituent elements of one of the most common crimes in the field of software science, and examining the various types and methods of committing software crimes, it becomes essential to propose methods, policies, and strategies to combat this growing threat.

Taking into account the fact that lately technology is found in all fields of activity and the company is dependent on technology, software systems and the online environment, it is imperative to establish software security policies and legal provisions that include and penalize any attempt to commit software crimes and problems of discovery, prevention and countering cybercrime including through the use of artificial intelligence (Franguloiu 2023, pp. 39-46). This leads to the emergence of the concept of cybersecurity, which can be defined as "that state of normality of digital information, resources and services provided by public or private entities in cyberspace". In concrete terms, cybersecurity can be achieved "by applying proactive and reactive security measures including security policies, standards and models, risk management and by implementing solutions for the protection of networks and information systems (Mihai coord., Ciuchi and Petrică, 2018, p.43).

The European Union has designed the Cyber Security Strategy 2016-2020 in this respect at the international level and at each country develops its own Cyber Security Strategy national level. As we have shown before in Romania, the cybercrime manifests itself in several forms: cyber-attacks (malware, ransom ware, DDoS attacks), software fraud (fictitious auctions of goods, compromise of user accounts on e-commerce sites or the creation of phishing sites for the collection of bank data) and fraud with bank cards (compromise of banknotes and the extraction of confidential information from customer cards).

Also, with regard to our country, we remember that Romania has adopted a Cyber Security Strategy, Law No. 362/2018 published in the Official Gazette of Romania no. 21 of January 9, 2019, on ensuring a high common level of security of networks and software systems and, in addition, the new criminal code and other special laws regulate and punish cybercrime.

As ways of discovering, preventing and countering organized crime we mention:
- the adoption of a legislative system adapted to the full range of crimes and activities that come into action of cybercrime, the creation of legislative levers that allow the prompt, in force and efficiency intervention of bodies with the attributes of prevention, investigation and research of cybercrime (Service for Combating Software Crime, a specialized structure within the Romanian Police)
- the cooperation at internal level between all authorities and institutions that have as their attributes of discovery, prevention and countering of organized crime and, the last, but not least, the cooperation between the public and private sectors in this field
- the international cooperation between states and between specialized authorities in the discovery, prevention and countering of organized crime
- the equipment and high-performance technology made available to all bodies and institutions with the powers of prevention, investigation and research of cybercrime
- high-performance cyber defense systems
- hiring highly specialized and professional personnel in the field within the institutions and bodies with the powers of prevention, investigation and research of cybercrime
- carrying out information and public awareness campaigns about the threats and risks that are present in cyberspace.

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On the Irrelevance of Prices in the Digital Age

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Abstract: This article makes the case that monetary prices have become less relevant in the digital age, while time, data and networks are the new market forming moment. Prices have decreased in importance to understand market dynamics between supply and demand in the digital age for several reasons: First, marginal costs of digital goods are often close to zero in online markets – meaning that an additional participant using digital goods only increases network benefits but does not entail substantial production cost increases. For instance, freemiums and subscription models offer basic online services for free for the masses and reap some benefits from premium subscriptions of some users who gain extra services or access. Data has become the new currency of information exchange, which results in online goods and services offered for free in lieu of access to information of user data. Network access has become the new demanded good, which is supplied by online social media platforms. On the supply side, individuals are invited to join to form a network for free in order to build a vital engagement community. Internet online service providers are also able to benefit from targeted or classified online advertisement space. The more people join their networks, the better the ecosystem growth is and user engagement, which all boost online advertisement space pricing, generating more revenue for the platform provider, who is not constraint with much more marginal costs incurred from one more user using the platform. If the platform providers sell premium accounts with extra features, the online digital space can be used efficiently with dynamic and personalized pricing to adjust prices in real time and based on the anticipated consumer budget and purchase behavior patterns derived from big data analysis. Digital markets also offer more of an abundance in complexity and opportunity than physical markets as the technical capacities are more constraint by storage and energy rather than physical space and distance. Pricing is therefore more dependent on access to online communities and interesting engagement opportunities than physical transfers of goods or provision of traditional services. Online markets are also more likely to offer decentralized solutions and open-source models, in which people contribute themselves with their time to provide content and software development, which has become a more creative source of value rather than transfer of payments. The discussion reflects on the role of determining new value creation and consumer choices in the digital economy.

Keywords: Decentralized Economy, Digitalization, Exchange, Innovation, New Markets, Online Social Media Platforms, Price, Value

Introduction

This paper discusses modern price effects in the digital economy. It thereby argues that classical traditional pricing models are not as relevant for capturing market dynamics in the digital social online media markets. In neoclassical economics, prices are determined by supply meeting demand. Prices order human behavior and guide decisions to depart with funds for consumption. Prices also influence innovation and production of goods and services. On a higher level, prices are also igniting social and population trends.

The advent of digitalization has revolutionized nearly every aspect of modern life, transforming industries, economies, and the way people interact. Social media has become an integral part of daily life, reshaping the way people connect, communicate, and share information online. Platforms like Facebook, Instagram, Twitter, TikTok, and LinkedIn offer individuals, brands, and organizations a space to engage with a global audience in real-time. Social media fosters community building, promotes self-expression, and serves as a powerful

tool for marketing and brand awareness. It allows users to create and share content, ranging from personal stories to professional achievements, while also influencing trends, opinions, and social movements. Interestingly, social online media changes price dynamics due to various specificities. This paper makes the case that classical prices have become more irrelevant in the digital age.

In order to explain the irrelevance of prices in the digital age, this paper covers the relatively-low marginal costs of digital goods; freemium and subscription models; data as a currency; network effects in digital online media platforms; dynamic and personalized pricing opportunities online; digital abundance versus scarcity in physical markets as well as decentralized and open-source models.

The Marginal Cost of Digital Goods is Near Zero

In traditional economics, the marginal cost of producing an additional unit of a product determines pricing. However, in the digital world, the marginal cost of producing another copy of software, an e-book, or a digital song is nearly zero. Once a digital product is created, it can be copied, shared, and distributed without the raw material, labor, or logistics costs that physical goods require.

In the digital social online media economy, the marginal addition of users and their consumption actually creates value of network benefits. The more users are using a platform, the better the information exchange and network diversity becomes, which enhances the number of attracted users, the time spent on the platform and the engagement with the platform.

This shift has led to new pricing strategies, such as pay-what-you-want models, free distribution with premium add-ons. Monetization now occurs less from selling a good but more from selling online digital advertisement space. Since pricing is no longer constrained by production costs in factory operations, companies focus more on value perception, engagement, and competitive positioning.

Overall, the digital age challenges traditional pricing models and forces businesses to rethink how they assign value to their products and services. Time spent on social online media is the price people pay for forming a network that is attractive to other consumers. Information shared on social online media platforms is the currency users pay for using online tools for free. The shared information can be amalgamated to big data, from which inferences can be derived about trends and comparisons with other users.

Freemium & Subscription Models

One of the most successful monetization strategies of the digital era is the freemium model. Companies provide basic access to their digital products for free while charging for premium features (e.g., special advanced tools, markings on the account etc.), exclusive content, or enhanced experiences. This model works well for software (e.g., Slack, Zoom), music streaming (Spotify), mobile applications and social online media.

Similarly, subscription-based models have replaced traditional one-time purchases. Consumers now pay for ongoing access rather than outright ownership. Netflix, Adobe Creative Cloud, and Microsoft 365 illustrate how subscriptions generate steady revenue streams while keeping customers engaged. The shift from ownership to access highlights how pricing strategies have evolved to focus on long-term relationships and customer satisfaction rather than one-time individual transactions.

This pricing in tranches has its merits for oftentimes occurring by default and consumers incurring high costs over time rather unnoticingly. The subscription pricing model, however, leaves room for flexibility of consumers to exit markets. Online providers therefore have to fascinate and engage consumers on a long-term basis. In the case of social online media platforms, changing features or ownership of the platform may entertain

consumers longer while growing a network also helps to make the customer experience richer. More than in traditional production markets, the ownership of social online media platforms plays a role in the usage of the platform and consumer patterns.

The Rise of Data as Currency

In the digital economy, money as a currency transferred for a price charged for consumption is not the only currency. In social online media platforms, time spent and information shared online has become the new asset as for forming data and a network that is of value to attract other users to join. Companies like Amazon, Google, Facebook, and TikTok offer free services while monetizing user data through targeted advertising and offering big data generated insights. Rather than charging customers directly, businesses harvest information about user behavior, preferences, and interactions to refine their offerings and increase ad revenue but also to allow other market actors to serve them more strategically.

This shift has led to privacy concerns and regulatory challenges, with debates over how data should be collected, stored, and monetized. Despite this, data-driven pricing models are now dominant, where the real "price" of using a platform is the user's willingness to share personal information as well as spend time and let go of certain parts of privacy. The European General Data Protection Regulation (GDPR) is creating worldwide standards to cope with this implicit pricing of free use of online platforms.

Network Effects Drive Value

Many digital platforms derive their value not from individual purchases of goods and services online but from network effects and selling the platform to users who hold the hope of access to a vibrant network and interesting entertainment opportunities. A network effect occurs when a product or service becomes more valuable as the more people use it. Network value increases exponentially with the number of users joining on social online media. Social media platforms (e.g., Facebook, Twitter, LinkedIn), online marketplaces (e.g., Amazon, eBay), and collaboration tools (e.g., Slack, Zoom) but also the sharing economy (e.g., Uber, Lyft, AirBnB) thrive because their utility increases with more users.

Because of network effects, companies often prioritize growth over short-term profits. Like in the case of a launch of a new app or social online media platform, users are most of the time invited to join for free and if they want to upgrade for special features or after time when a large network has been built, the corporation may starts charging for services. They offer services at minimal or no cost to attract users and establish dominance. Once a platform reaches critical mass, monetization strategies—such as advertising, subscriptions, or partnerships—become more effective revenue generating targets than attracting even more users. Once users are locked-in, some network economy platform providers start charging prices or higher mark-up fees, e.g., as in the case of Adobe, AirBnB, Dropbox or Skype happened. The business life cycle therefore may first focus on network and then – when a vital network has been established and users are locked-in – in subsequent periods on more adding features and selling them or establishing long-term revenue streams via subscriptions.

Dynamic & Personalized Pricing

Pricing in the digital age is no longer static, meaning that one price exists for all customers alike. E-commerce and digital services now leverage Artificial Intelligence (AI) and big data to adjust prices in real-time based on demand, location, browsing history, or even individual purchasing behavior. This is known as dynamic pricing.

Airlines, ride-sharing apps (e.g., Uber, Lyft), and e-commerce giants (e.g., Amazon) use algorithms to maximize revenue by offering different prices to different users at different times. Personalized pricing is becoming more sophisticated, allowing businesses to tailor offers based on consumer willingness to pay and reap markets most efficiently. While

beneficial for companies, this practice raises ethical questions about fairness and transparency.

On the other hand, consumers have more than ever opportunities to bundle together to make bulk purchases finding each other on online platforms that connect consumers with similar purchase needs (e.g., like Groupon). Consumers also have opportunities like never before to extend reviews and publish them online, which raises transparency of the consumption experience. Consumers also have access to information about promotion codes that are shared online widely but can also use shopbots – automated tools or software designed to assist consumers in finding the best deals, comparing prices, and purchasing products online. This kind of modern shopping assistant is helping users navigate e-commerce websites by automatically searching for items, comparing prices across different retailers, and sometimes even applying discount codes. Shopbots are often used to streamline the shopping process and help users save time and money by identifying the most cost-effective options. Some shopbots are integrated with personal virtual assistants or browser extensions, while others may exist as independent websites or apps that allow users to input their desired product details.

Digital Abundance vs. Scarcity in Physical Markets

Traditional economics is based on the principle of scarcity—resources are limited, so prices regulate access. The more scarce a product is, the higher the likelihood is that this product is demanded at a high price. In digital markets, abundance is the default state. Digital books, music, movies, and software can be reproduced indefinitely at no cost, challenging the conventional relationship between supply, demand, and pricing. The consumption of a traditional good in a classical market also often takes away the opportunity for others to consume the same good, which is not the case in online markets as news online, for instance, do not deplete or degrade if being consumed.

Unlike in the real economy, in which the consumption of a good is often associated with the destruction of the good (e.g., food) or degradation of a good (e.g., clothing that wears out and cannot be shared), in the digital world consumption of online information does not deplete the information or takes away the opportunity or experience for others to consume the good. Even more so, the more people consumer information online, for instance on a social online media platform, the better the information gets as there is more opportunity to interact and shape the content via comments and crowd reflection.

As a result, many digital products are given away for free, with companies monetizing through alternative means like advertising, sponsorships, or community-driven donations. This abundance has also forced industries like publishing and entertainment to shift from unit-based sales to access-based models, such as streaming services. Abundance and constantly evolving information online as well as the constant update of online solutions also leads to subscription-based purchase models being enacted rather than one-time static price purchases for ownership. Decentralized creation of goods online – e.g., in the swarm information sourcing on social online media platforms – drives this trend of rather charging several times on a constant basis for subscriptions in contrast to classical goods' ownership models.

Decentralization & Open-Source Models

The rise of open-source software and decentralized technologies has further disrupted traditional pricing. Open-source platforms like Linux, Wikipedia, and blockchain projects (e.g., Bitcoin, Ethereum) rely on collaboration rather than fixed pricing models.

These decentralized ecosystems function without central authorities setting prices, allowing users to contribute, modify, and distribute resources freely. Crowdfunding, token economies, and community-driven development are redefining how digital goods are valued and sustained.

By eliminating centralized control, these models democratize access and encourage innovation, further diminishing the role of fixed pricing in the digital economy.

Discussion

The overall descriptive findings presented in this article challenge the conventional understanding of pricing and value in the digital economy. As traditional price mechanisms become increasingly irrelevant, businesses must adopt new frameworks to assess market dynamics and consumer behavior online in the digital age.

One key takeaway is that monetization strategies are now less dependent on direct sales and more on engagement, data utilization, and network expansion. The shift towards freemium models, personalized pricing, and data-driven revenue generation reflects a fundamental transformation in how businesses operate in the digital landscape.

However, these changes also raise critical concerns, particularly regarding consumer privacy, market fairness, and the ethics of dynamic pricing. In particular, the rise of social media has sparked debates around issues like privacy, misinformation, and mental health, as constant connectivity can lead to negative impacts on well-being. Despite these challenges, social media continues to shape modern culture, offering both opportunities and risks in an increasingly digital world.

Companies must balance profitability with transparency and consumer trust, ensuring that pricing mechanisms do not exploit users unfairly. Consumers on their part can bundle together and exchange information online about their customer experiences with certain online providers, which will help uphold ethical standards.

Moreover, the rise of decentralized models and open-source platforms suggests an ongoing trend toward democratizing access to digital goods and services. The implications of this shift extend beyond economics, influencing how society perceives ownership, collaboration, and innovation.

Ultimately, as digital markets continue to evolve, businesses and policymakers must remain agile, adapting to new technologies and consumer expectations while maintaining ethical and sustainable practices in the new digital economy.

As for future developments, the online markets are prospected to continuously shift powered by technology advancements such as Artificial Intelligence (AI), the Internet of Things (IoT), cloud computing, and blockchain, which continue to shape new trends across sectors. One of the most prominent trends is the rise of automation and AI-driven decision-making, enabling businesses to optimize operations and enhance customer experiences. Additionally, the widespread adoption of 5G technology is accelerating digital connectivity, offering faster and more reliable communication networks. Remote work, e-commerce, and virtual experiences have also gained significant traction, driven by the pandemic and a growing demand for convenience and flexibility. As digitalization evolves, the focus is shifting toward data privacy, cybersecurity, and ethical AI, ensuring that these innovations are used responsibly and inclusively.

The Digital Revolution and Cultural Reconfiguration: The Impact of the Internet and Social Media on Values and Behaviors

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Abstract: This paper analyzes the impact of digital technology on cultural paradigms, with a specific focus on the transformation of art perception and consumption. Considering the influence of the internet and social media on cultural values, behaviors, and identity, the study explores how these technologies have democratized access to art while also contributing to its potential trivialization. The viral example of Cattelan's "banana" is used to illustrate how an artwork can become a viral phenomenon in the online environment, generating extensive public dialogue while simultaneously diluting the initial artistic message, alongside changes in the actual valuation of objects. The paper argues that digital technology not only changes how we consume art but also fundamentally reconfigures our relationship with it, influencing the perception of artistic value, authenticity, and the emotional impact of the aesthetic experience.

Keywords: Cultural Paradigms, Art Perception, Art Consumption, Phenomenology, Cattelan's Banana

Introduction

In the digital age, access to vast forms of technology, whether we speak of the internet or social networks, can be considered as factors, exposing individuals to a multitude of cultures and values from around the world, thus leading to a process of cultural globalization. Consequently, these factors, being omnipresent in our lives, have led to a fundamental transformation in how we communicate, interact, value, and thus, relate to the world. This profound transformation has a significant impact on cultural paradigms, namely the sets of beliefs, values, behaviors, and practices that define a culture. The present paper aims to analyze how the internet and social media influence individuals' values, particularly in relation to art and the artistic domain. A fundamental question for this paper lies in questioning the artistic experience, attempting to understand and define what it means to experience art in an authentic and autonomous way. This leads us to the question of what the artistic experience means today and whether it is possible in the era of consumerism. One of the most relevant examples for questioning the impact of how intertwined we are to consumerism and its typical behaviors is the case of the buyer of Cattelan's Banana. As noted in the article by Bryzgel (2019), an artist eats the piece of art—the banana—responding in a humoristic manner that, in a sense, it was worth it.

Contents

Firstly, to analyze how we relate to art today, it is necessary to delve into and address several key elements. We cannot help but wonder if there has been a change in the status of art, specifically, a trivialization of the artistic phenomenon. Thanks to the internet, a simple museum visit has become much more accessible. Thus, an individual can "visit" a museum through a virtual tour or even be part of a virtual exhibition. However, we can observe a first step towards a superficialization of the artistic experience, through the loss of direct contact with the artwork and its exhibition context. Walter (1969) supports such an argument, considering that a digital reproduction of artworks, such as a photograph of a painting, by definition, reduces or even loses the aura of the original—a concept further explained by Keller (2019). Moreover, online distribution can dilute the uniqueness and value of the work. Thus, I tend to believe that an artwork is meant to be viewed in the intimacy in which it was created: in a confined space,

designated for one purpose and only one purpose— a place created by art for art, a museum in the true sense of the word. Another possible argument in this discussion can be found in Merleau-Ponty's (2012) phenomenology regarding the dimension of perception. Perception is not a simple passive reception of sensory information but an active and corporeal interaction with the surrounding environment. We see, hear, touch, smell, and taste the world through our body, which is always situated and involved in the experience. Although technologies like VR (Virtual Reality) attempt to create illusions of bodily presence, they remain mediated representations, lacking the materiality and complexity of direct interaction with a physical artwork. The contemplation of a painting in a museum involves not only sight but also the movement of the body in space, the perception of the canvas texture, the smell of paint, and natural light, all contributing to a holistic experience that the digital environment can hardly replicate fully.

The use of artworks in memes and other forms of online humorous content represents a complex phenomenon with significant implications for the perception and value of art. Through rapid reproduction and distribution in the digital environment, artworks, once objects of contemplation and admiration, are often reduced to mere objects of visual consumption, detached from their original artistic and cultural context. Humor, while it can be a way to bring the public closer to art, can also lead to its trivialization, diminishing its emotional and intellectual impact. Thus, masterpieces like the *Mona Lisa*, through the multitude of memes that use it in comic or unexpected contexts, lose part of their mystical aura and the complexity of interpretations, becoming a cultural symbol emptied of its initial meaning. Adaptations of classic paintings in popular memes, while demonstrating the public's familiarity with these works, also underscore a tendency to consume them superficially, without paying attention to deep meanings and historical context. This meme culture, by its viral nature and its emphasis on humor and immediate reactions, contributes to a banalization of art, transforming it into a product of rapid and ephemeral consumption.

Case Study: Cattelan's Banana, Comedian

Comedian was first presented at Art Basel Miami in 2019. The work consists of a real banana duct-taped to a white wall. There were three editions of the work, each sold for amounts between $120,000 and $150,000. Cattelan is known for his satirical and provocative works, which question the conventions of the art world and society in general. In the case of *Comedian*, his intention seems to have been to comment on the absurdity of the art market, its speculative values, and its ability to transform banal objects into valuable artworks. The radical simplicity of the work was a key factor in its virality. The image of a banana taped to a wall spread rapidly online, generating a huge number of memes, parodies, and comments. *Comedian* thus became a global cultural phenomenon, far exceeding the boundaries of the art world. The impact on the public was diverse: some considered the work a good joke, others a pertinent critique of the art market, and others simply considered it an absurdity.

As mentioned, Cattelan's work sparked heated discussions. We begin with a first question, namely whether a banal object, like a banana, can be considered art simply because it is displayed in a gallery and labeled as such? After the wave caused by the duct-taped banana, young people on the social media platform TikTok began to create such "works." Several teenagers gathered in a museum, and one of them decided to take off his shoe, placing it in the middle of the gallery. After a little while, visitors became aware of the "piece of art" or object and started to take pictures and even admire a mere, usual, and very much mundane shoe. Those images went viral on several social media platforms, bringing satire and questions on what it means to be an artist and why certain individuals deserve such status. Such an example serves for the famous art and non-art debate and the attempt to define, in the present, what elements are necessary to define an artwork. Moreover, to what extent is the work *Comedian* an authentic work, considering its simplicity and the possibility of being replicated by anyone? These thoughts lead to another relevant question, namely: What exactly

is being sold, the banana, the idea, or the certificate of authenticity? Bryzgel (2019) offers an answer to the issue, stating that the buyer is rather interested in the certificate of authenticity, at the expense of dismissing the piece of art. The focus is on the idea (perhaps in the platonic way), the concept proposed and certainly not on the empirical aspect of the art piece. Even though this argument was presented, the issue is still a topic for debate since it involves entering a new paradigm, changing the founding values of art, and the shift or perhaps a fundamental change of our values (the scale of values of the consumer and the artmaker as well). While I fear I cannot provide definitive answers to these questions, I consider this research necessary to understand the direction in which culture and the arts are likely to head.

From Merleau-Ponty's (2012) phenomenological perspective, *Comedian* calls into question our corporeal and perceptual relationship with the artwork. Traditionally, the artistic experience involves a complex sensory interaction with the physical object, a contemplation that engages our body and senses. In the case of the banana, this interaction is reduced to a minimum: a banana, adhesive tape, and a wall. Through digital reproduction, this experience is further mediated, reduced to a two-dimensional image on a screen. Here, the concept of simulacrum, developed by Jean Baudrillard, comes into play. A simulacrum is a copy that no longer has an original. In the case of *Comedian*, we can argue that the work became a simulacrum the moment it entered the online media circuit. The image of the banana taped to the wall became more important than the physical object itself. The direct experience with the work no longer matters, but its image, which circulates and is reinterpreted infinitely in the digital environment.

We could also say that the work created a hyperreality, a kind of simulated reality that becomes more real than reality itself. The image of the banana became a powerful symbol, far exceeding its initial significance. Of course, we cannot conclude this case study without briefly touching upon the fact that it perfectly illustrates the process of banalization of art through social media. The work is reduced to a simple image that is easy to replicate and distribute, losing its complexity and depth, fundamental elements for an artwork. However, we cannot help but question whether this might be the future of the arts, works that are easy to capture, digest, and thus have the potential for viralization. *Comedian* has become more than a simple banana taped to a wall; it has become a symbol of a new cultural paradigm, where its image and online circulation are more important than the physical object itself.

Conclusion

The analysis of art mirrored in the digital screen of the present, reveals a continuous metamorphosis of values, experience, and artistic consumption, with art being a seismograph of the human spirit, reflecting and influencing society. Digital technology, with its democratization, has opened the doors to infinite virtual galleries, but has also blurred the aura of uniqueness and direct contact with the work. We have witnessed the birth of new forms of artistic expression, but also the banalization of masterpieces, reduced to simple memes. The *Comedian* case has shown us how a work can become a simulacrum in the media whirlwind, losing its initial contour but generating extensive public dialogue. Merleau-Ponty (2012) reminds us of the importance of the body in perception, and Baudrillard warns us of the danger of hyperreality. In the end, each of us is a creator of art, through the way we perceive and interpret the world. But, like a mirror, we see only what our own values allow us to see. We cannot know more than we allow ourselves to understand, and herein lies, perhaps, the deepest and most personal form of art: the art of opening ourselves to the new, to the unknown, to the infinite possibilities. For ultimately, art is not just what we see, but also how we choose to see.

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Aspects of the Old Testament Foundation of the Feast of Yom Kippur

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Abstract: This study explores the biblical foundations and theological meanings of Yom Kippur, one of the holiest days in the Jewish religious calendar. The research analyzes the Levitical texts that underlie this holiday, along with rabbinic interpretations that enrich our understanding of it. The main themes addressed include the role of complete fasting and sacred rest as a means of introspection and closeness to God, the significance of atoning for sins through repentance (teshuva), and the intrinsic spiritual energy of the day, which supports divine reconciliation and purification of the soul. The study also emphasizes the importance of rabbinic commentaries in defining the practices and deepening the spiritual meanings of Yom Kippur, highlighting the uniqueness of this day as a time of spiritual rebirth and joy. The main conclusion is that, from a Jewish perspective, Yom Kippur is not merely a religious ceremony but a sacred institution that facilitates the reconnection between humanity and divinity, providing an annual opportunity for purification and spiritual renewal.

Keywords: Yom Kippur, Fasting, Repentance, Shabbat, Day of Rest, Day of Atonement, Teshuva

1. Introduction

Yom Kippur, also known as the Day of Atonement, is one of the most sacred and significant days in the Jewish religious calendar, dedicated to the process of repentance, forgiveness and reconciliation with the Divine. The origin of this holiday is deeply rooted in biblical tradition, based on the commandments detailed in the book of Leviticus. It is a day of solemn introspection and purification, characterized by fasting, prayer, and observance of rigorous prohibitions designed to facilitate spiritual closeness to God. It is important to consider the biblical foundation of Yom Kippur and how it has been interpreted, expanded, and contextualized through rabbinic commentary. These rabbinic contributions not only enrich the theological understanding of the holiday but also emphasize the spiritual, social, and cosmic dimensions of the holiday.

We will focus on the foundational biblical texts that define fasting, rest, and atonement as essential elements of the feast and examine rabbinic contributions that offer insight into spiritual practices and meanings, emphasizing how the oral tradition complements the written text. Through this approach, we aim to provide a broad and deep understanding of Yom Kippur, both as a biblical institution and as an expression of a dynamic and living spirituality, providing an opportunity for reflection and renewal at both personal and communal levels.

2. The Fast of Yom Kippur: Scriptural Foundation (Leviticus 23: 27, 29, 32)

Leviticus 23: 27, 29, 32: "27. And on the tenth day of the seventh month, which is the day of cleansing, you shall have a holy convocation, and you shall fast, and burn burnt offerings to the Lord; 29. Every soul that does not fast on that day shall be cut off from his people; 32. This is a day of rest for you; you shall fast from the evening of the ninth day of the month; from that evening until the evening of the tenth day of the month you shall keep your Sabbath."

The fast of Yom Kippur is one of the holiest and most important days in the Jewish calendar. Known as the Day of Atonement, it is dedicated to repentance, prayer, and atonement for sins committed in the previous year. It is a complete fast with a series of strict rules, accompanied by a solemn and introspective atmosphere.

In Mishna Yoma 8:1, the five main prohibitions of Yom Kippur are listed, emphasizing the uniqueness and solemnity of this day. These restrictions are not intended to cause suffering but rather to allow man to focus on the spiritual and divine dimension, temporarily ignoring physical needs. The five prohibitions are as follows: 1) Eating and Drinking - It is forbidden to eat or drink; 2) Washing - It is forbidden to wash the body except in strictly necessary situations; 3) Anointing with Lotions - No oils, creams or other cosmetics; 4) Leather Footwear - It is forbidden to wear leather footwear; other materials may be used; 5) Marital Relations - Any intimate relations are forbidden (Mishna Yoma 8:1).

In other words, on Yom Kippur, basic physical needs are disregarded, but man focuses on his spiritual duties. By fasting and humbling himself, a person merits to distance himself from his animal nature - the physical world - and draw closer to God (Fridlander, 2004, 267).

There is a fundamental distinction between fasting on Yom Kippur and fasting observed on other fast days. In the case of other fast days, abstention from food is intended to counteract bodily tendencies, thus expressing repentance. Fasting on Yom Kippur, on the other hand, is based on the concept that the soul, being in a higher spiritual state, does not require physical nourishment. This type of fast is also intended to remove any distractions, allowing us to focus on the deeper meaning of this holy day (Hutner, 2008).

One of the reasons for this Yom Kippur mitzvot is that, out of His bounty to His creations, God has given man an annual day dedicated to atoning for his transgressions through repentance. Thus, the faithful Jew is urged to fast on this day, because food, drink and other physical pleasures tend to awaken the material side of the human being, stimulating desires and faults and distracting him from the pursuit of truth, which is the service of God. Before the divine judgment, it is not fitting that man should be preoccupied with material matters, such as food and drink, at this solemn moment. Therefore, the Jewish believer is called to elevate himself spiritually, diminishing his attachment to the physical world, in order to become worthy and able to obtain divine forgiveness, uninfluenced by fleshly desires.

The root of this commandment in scripture can be explained as follows: because of God's infinite kindness to His creations, He has designated one day a year on which man can obtain atonement for his sins through repentance (teshuva). For this reason, the believing Jew is obligated to fast on this day, because the consumption of food, drink and other sensory pleasures activates the physical side of the being, encouraging bodily desires and the potential to sin. It is not fitting that man, on the day of his judgment, should present himself before his Creator with his soul darkened and troubled by the influences of food and drink. The judgment is based solely on the deeds committed by the individual at that time. Therefore, it is appropriate for the believing Jew to elevate his soul and overcome his physical nature on this day of great importance in order to become worthy and able to receive atonement, unhindered by the influence of bodily desires (Sefer HaChinukh, 2018, 313).

According to the Shulchan Aruch (2004)., eating an amount of food equivalent to the volume of a kotevet (a large curmal) on Yom Kippur entails liability for karet. However, the consumption of any amount even below this measure is a violation of a biblical prohibition, in accordance with the well-known principle of chatzi shiur assur min hatorah, which stipulates that even part of a forbidden measure is also forbidden according to the Torah. The prohibition against eating on Yom Kippur according to the commandment in Leviticus 23:27, 29, 32 is generally extremely strict, with food permitted only in situations where there is a potential danger to life. While this principle seems straightforward, in practice, determining who is considered to be in danger when fasting is a complex issue that has generated significant debate among poskim (halakhic decisors). We will analyze three distinct categories of persons who might be included in this situation.

The Mishna Berura mentions, however, that there are differing opinions that hold that the three-day period can be calculated as an exact 72-hour duration. Accordingly, a yoledet could consume food until the precise fulfillment of those 72 hours, which would allow him to

eat on part of the day of Yom Kippur if the time limit ends in the middle of that day. The Mishna Berura also emphasizes that during the period of three days after childbirth, a yoledet should not fast, even if she wishes to do so. However, some commentators suggest that in such cases, she may consume food in smaller quantities than the shiur (the permissible halachic measure), "Even if she says that she does not need to eat, we still feed her and tell her to eat. However, in such cases, we should give her smaller amounts than the [prohibited] measure every time. But if she hasn't said she doesn't need it, we give her to eat as normal, without making the distinction or offering less than the measure. However, there are those who are stricter, and even in this case they demand that she be given less than the measure" (Mishnah Berurah, 2010, 617:10).

A person whose state of health is so serious that his or her life is endangered is undoubtedly permitted and obligated to consume food on Yom Kippur. The determination as to whether a person is in such a situation is based, according to Ghemara, on the assessment of experts, usually doctors. If a doctor is not available, a person's self-assessment is accepted, and the person is given the authority to communicate whether he or she feels he or she needs to eat. "As far as a sick person is concerned, we give them food based on expert opinion. If no experts are available, we feed him according to his own opinion until he says to stop" (Masechet Yoma, 1989, 82a).

Aruch states that, according to Ghemara, in most cases, it is based on the assessment of the doctors to decide whether the patient should eat. However, if the doctors feel that the patient does not need to eat, but the patient insists that he does, he will be allowed to eat, ignoring the doctors' recommendation in this case. "As for a sick person who needs to eat, if there is an expert physician present, even if he is non-Jewish, who says, 'If he does not eat, his illness is likely to worsen and he may be in danger,' we give him to eat based on his suggestion, and all the more so if he says that the patient may die. Even if the sick person says, "I don't need it," we listen to the doctor. If the sick person says he needs to eat, even if a hundred doctors say he doesn't need to, we listen to the sick person" (Aruch, 2004, 618:1).

As a parallel between the fast of Yom Kippur and the Orthodox Christian fast, we will evoke what Evagrius, one of the great Desert Fathers, mentions about fasting. He speaks of fasting as an essential means of purifying the soul and drawing closer to God. He emphasizes that fasting must be done with all strength and sincerity, considering it an act of self-giving before God. Fasting is seen as a method of inner purification, a means of leaving faults behind and renewing one's relationship with God, and it also has a spiritual warfare dimension, helping to overcome temptations and to drive away evil thoughts or influences. Through fasting, the mind and soul become clearer, more ordered, ready for prayer and contemplation. It is also an act of humility and obedience, which opens the soul to communion with the Creator (Evagrie Ponticus, 1946, 46).

John Cassian, an important theologian of monastic spirituality, places particular emphasis on the spiritual dimension of fasting, emphasizing that true fasting goes beyond mere physical abstinence and extends to the inner life. In his vision, fasting is not an end in itself, but a means to an authentic spiritual experience. Cassian emphasizes that it is not enough to focus only on bodily fasting (abstaining from food). True fasting must be accompanied by deep spiritual work, the cleansing of thoughts and meditation on the divine. Without this inner work it is impossible to reach the height of true righteousness and purity. Inspired by the Lord's words, Cassian reminds us that we must first cleanse the inner part of our life, symbolized by "the inner part of the cup and the bowl" (Matthew 23: 25), so that the outer part may be clean. This interior cleansing involves humility, repentance and prayer (Cassian 1946, 100).

Simeon Metaphrastus, a Byzantine writer deeply concerned with Christian spirituality, approaches fasting with a wisdom that balances the value of ascetic practices against the dangers of over-reliance on them. He offers a balanced perspective that warns of the spiritual

risks associated with a misunderstanding of fasting and other needs. Simeon recognizes the value of fasting, fasting, fasting, fasting and exemplary living. These are seen as good and helpful practices, but he considers them only a beginning of God-loving living, not an end in themselves. They must lead to genuine inner transformation. He warns that it is foolhardy to put all our trust in these outward practices alone. Fasting, though beneficial, is not a guarantee of spiritual purity or salvation. Wickedness can linger in the heart even in the midst of necessities, withdrawing temporarily only to deceive the soul. Simion speaks of a subtle spiritual trap: during the time of the needs, man may come to believe that he has cleansed his mind and reached perfection. This delusion is a major danger because it leads to pride, which makes him vulnerable to the attacks of evil. Wickedness, temporarily withdrawn, can come back thievishly and lower man to the lowest states of the soul. His teaching emphasizes that true Christian living consists not only in outward deeds, but in the inner work of the heart. Humility, temperance and discernment are needed to avoid deception. Only in this way can man progress on the path of God-loving life (Metaphrastus, 1976, 362).

Although Yom Kippur fasting and Orthodox Christian fasting have different contexts and rules, they share the same fundamental aspiration: the uplifting of the soul towards God through material renunciation and sincere repentance. While Yom Kippur is fixed in the Jewish calendar as a day of collective and individual atonement, Christian fasting is more diverse in form and purpose, including not only repentance but also the constant struggle against sins and the desire for spiritual fulfillment.

3. The Sacred Commandment to Rest on Yom Kippur (Leviticus 23:28, 30, 31)

Leviticus 23: 28, 30, 31: "28. Do no work on that day, for it is the day of cleansing" that you may be clean before the face of the Lord your God. 30. And every soul that labors in that day will I cut off from among his people. 31. You shall not do any work: this is an everlasting habitation in your nation in all your cities."

According to these verses, work is forbidden on Yom Kippur to prevent distractions. "The mit *mitzvah* to refrain from work on Yom Kippur has as its main reason that we should not be distracted by anything, so that we may focus our thoughts and intentions on obtaining forgiveness and absolution from the Master of the Universe on this day, proclaimed as the day of forgiveness since the creation of the world" (Sefefr Ha'Hinuk, 2024, 317). It can be said that there is a positive commandment to refrain from performing melakha (forbidden activities) on Yom Kippur, according to the verse, "This is a day of rest for you" (Leviticus 23: 32). A person who works on Yom Kippur not only fails to fulfill this positive commandment to refrain from melakha, but also violates a negative commandment, "You shall not do any work on that day" (Leviticus 23: 28). Since Yom Kippur is called "Shabbat," the thirty-nine categories of activities forbidden on Shabbat are also forbidden on Yom Kippur. The difference lies in the punishment: whoever willfully works on Shabbat (in the presence of witnesses and after warning) is liable to stoning to death by stoning, while for Yom Kippur he is liable to karet (spiritual exclusion). If one performs melakha unknowingly on either of these days, one must offer a sin offering. This is made clear in the verse, "And every soul that shall work on that day, I will cut him off from among his people." (Leviticus 23: 30).

As on Shabbat, the commandment to rest on Yom Kippur includes the obligation not to treat the day as an ordinary day. In addition to refraining from forbidden activities, it is not permitted to engage in strenuous activities or preparations for weekdays. For example, it is not permissible to open a store or move heavy items in preparation for activities after Yom Kippur. Even if these activities do not fall into the thirty-nine categories of forbidden activities, they contravene the commandment concerning rest (Leviticus 23: 32). This

commandment emphasizes the preservation of the sacredness and uniqueness of the day. A person's behavior must be different from that of an ordinary day (Melamed, 2016, 22:1).

In general, all Shabbat laws also apply on Yom Kippur, with an additional mitzva to fast, which requires an even deeper separation from worldly concerns.

In terms of Christian teaching, Gregory Palamas offers a profound and integrative perspective on the concept of "rest in God", emphasizing that this rest is not inactivity, but implies an active and continuous spiritual work in communion with God. Authentic rest in God is not a state of passivity, but a work of the good and virtues, realized through divine grace received in union with him. Gregory Palamas emphasizes that rest and work in God are inseparable: to rest in God is to work in God. This work involves turning away from sin and active involvement in good works, prayer and living the virtues. Gregory Palamas shows that resting in God is profoundly dynamic and working. It is not mere withdrawal from the world or static contemplation, but a living participation in the uncreated divine energies. True rest involves the working of good and collaboration with God's grace, which leads to spiritual growth and communion with him. For Gregory Palamas, "rest in God" is not a state of passive repose, but an active working in divine grace, a living of the good and virtues in communion with God. This vision contrasts with the abstract and passive conception criticized in Varlaamus, which separated rest from any spiritual work. Thus, rest in God becomes synonymous with the fulfillment of the divine commandments and participation in his life, offering a dynamic and profound understanding of the Christian life (St. Gregory Palamas 1977, 254).

Yom Kippur is a day of sacred rest through complete abstention from work, creating an exclusive space for repentance, prayer and reconciliation with God. It is a physical and spiritual rest imposed to ensure total concentration on the divine purpose of the day. Christian rest, according to Gregory Palamas, is a dynamic state of spiritual activity in divine grace, manifested in the fulfillment of the good and continuous communion with God. It does not imply inactivity, but a living experience of the divine commandments. Both forms of rest emphasize the importance of separation from worldliness in order to achieve a state of holiness and closeness to God, but they differ in their emphasis on the passive or active nature of this rest.

4. Yom Kippur as the Day of Atonement (Leviticus 23: 27)

According to the *Sefer HaChinukh,* from the moment of Creation, God designated Yom Kippur as a day of atonement for sins, a day whose essential nature allows for spiritual purification and reconciliation with God. From the very beginning, this day was set apart and sanctified by God for this specific purpose. By consecrating this day for the process of atonement, Yom Kippur has acquired a special sacredness and has been invested by the Divinity with the capacity to support this process. This is emphasized by the rabbis, who repeatedly state that Yom Kippur 'repairs' - an expression that underlines the intrinsic power of this day. In addition, it emphasizes that Yom Kippur is indispensable for maintaining the cosmic balance of the world. The fundamental rationale for this commandment derives from the divine kindness shown to the Jewish people: God established an annual day dedicated to the atonement of sins through the process of *teshuva* (repentance). Without this annual opportunity for purification, the accumulation of wrongs over the years would lead to moral saturation and threaten the existential equilibrium of the world, necessitating its destruction. Consequently, to ensure the perpetuation of the universal order, God, in His infinite wisdom, established Yom Kippur as a Day of Reconciliation and spiritual restoration (Sefer HaChinukh, 2024, 185).

Rabbinic tradition provides examples of figures such as Adam, Cain, Reuben and Judah, who realized the process of *Teshuva* (repentance) long before Moses descended from Mount Sinai with the second set of Tablets of the Law and the official integration of Yom

Kippur into the Jewish calendar. The question therefore arises: what fundamental change did Yom Kippur bring in this context? To answer this, it is important to examine the circumstances in which this day was established (Rotaru, 2015, 318-322).

The divine revelation on Mount Sinai, when God gave the Ten Commandments to all the Jewish people, took place on the 6th of Sivan, known as the feast of Shavuot. After this event, Moses ascended Mount Sinai for a period of forty days, during which time he received the Torah, and then descended with the first set of Tablets of the Law. During his absence, the Jewish people, believing that Moses would not return, built the Golden Calf, a serious act of idolatry. When Moses returned and saw this act, he destroyed the Tablets in outrage. He then climbed Mount Sinai again for another forty days, praying for forgiveness for the Jewish people. Finally, he was called for a third ascent of the mountain, where he received the second set of Tablets of the Law. He descended with them on the day that would become known as Yom Kippur. This moment marked the reconciliation between God and the Jewish people, establishing Yom Kippur as a day of atonement and forgiveness for all future generations. Thus, Yom Kippur not only symbolizes the possibility of repentance, but institutionalizes a specific day in the calendar for the process of spiritual reconciliation, with deep theological meanings related to the relationship between Divinity and humanity (Rotaru, 2019, 94-105).

According to Rabbi Eliyahu Dessler, Yom Kippur is a day imbued with an intrinsic spiritual energy of atonement and forgiveness. This concept is based on the idea that the holidays are not celebrated merely as symbols or commemorations of past events, but allow us to reconnect with the temporal source of their original holiness. The holiness manifested in the original moment of these days continues to directly influence the present, being the same as it was when they were established. Rabbi Tsvi Hirsch Broyde of Kélèm, Rav Dessler's teacher, emphasized that time does not pass over man passively, but that man travels a journey through time. For example, the first Shabbat represents a "temporal station" called Shabbat, and every week, man reaches this station again, accessing the same holiness and spiritual influence as during the first Shabbat. The same principle applies to all holidays: they are not mere commemorations, but recurring points in time that allow direct access to the original spiritual energies that define them. Before the institution of Yom Kippur, the process of teshuva was sufficient to remove the wrongs committed by a person. However, with the establishment of this holy day, the Jewish people were given a unique opportunity: to completely erase the wrongs and start anew with a "clean slate". This process not only remedies spiritual damage, but allows for the full restoration of the lost spiritual level (Luzzatto, 2022, 4:8:5).

Yom Kippur is a special day set aside by God on which the genuine repentance of the Jewish people is accepted without hindrance and their wrongs are easily erased. This day has the power to repair all the spiritual damage caused by sins, enabling those who repent to return to the original state of purity, holiness and closeness to God from which they had strayed. An interesting aspect of Yom Kippur is the opportunity to make up for seemingly lost spiritual years. Through deep and sincere repentance, individuals can transform past mistakes into merits, even reaching higher levels of spiritual elevation. Moreover, on this day, God works together with the repentant, facilitating the process of spiritual restoration and return to holiness. Thus, Yom Kippur is not just a day of atonement, but a miraculous moment of deep reconnection with Divinity and spiritual renewal.

Rabbi Fridlander highlights that Yom Kippur is a day on which man receives special divine support to repent. This day is characterized by an intense manifestation of divine mercy, whereby man is encouraged and supported to turn to God through teshuva (repentance). This help from heaven is not conditional on the merits of the individual; even those who, according to strict law, would not be eligible for such assistance, receive this support. This is the unique power of Yom Kippur - a divine opportunity offered to all for spiritual reconnection (Fridlander, 2004, 264). Similarly, Rabbi Noah Weinberg emphasizes

that Yom Kippur is a privileged day on which man can appeal directly to God, without obstacles or delays. This concept is reflected in the prophetic verse "Call to Him while He is near," which traditionally refers to Yom Kippur. On this day, God is more accessible than ever (Weinberg, 2024). To illustrate this, Weinberg compares the relationship with God on Yom Kippur to having direct access to a high-ranking official, such as a mayor, during an election campaign, when he is present among the people. Throughout the year, the process of teshuva is more complex and requires considerable effort, similar to getting an official audience. However, during Yom Kippur, the process is much easier and repentance is accepted immediately.

According to Rabbi Chalom Brezovsky, the essence of Yom Kippur is its atoning power. This holy day is defined by its unique ability to lift the Jewish soul above the material world, characterized by imperfections and mistakes, thus enabling it to reconnect to a higher spiritual level. This process of elevation causes all mistakes to be atoned for. Moreover, if a person directs his intentions towards God on this day, the Divine responds with a reciprocal closeness, thus strengthening the bond between man and Creator (Brezovsky, 2010, 167).

In the *Babylonian Talmud,* Rabbi Akiva offers a powerful analogy to describe the purifying effect of Yom Kippur: "God acts as a mikveh (ritual pool) for Israel." Just as a mikve cleanses physical impurities, God cleanses the spiritual impurities of the soul. Rabbi Akiva proclaims, "Blessed be Israel! Before Whom do you purify yourselves and Who purifies you? Your Father in Heaven!" This divine purification is metaphorically described by the verse, "I will sprinkle clean water upon you and you shall be cleansed," reaffirming God's role as the ultimate source of spiritual purification (Masechet Yoma, 1989, 85b).

Contrary to the perception that Yom Kippur is a day of sadness, rabbis consider this holiday to be one of the most joyous days in the Jewish calendar. This joy is rooted in the purification the day brings, giving those who repent a chance to begin a new spiritual chapter. Rabbi Akiva emphasizes this joy by saying: "Blessed be Israel!" The connection between purity and joy is also evident in the nuptial tradition, where one of the seven blessings invokes the joy of the first humans, Adam and Eve, in the Garden of Eden before sin: "Give lasting joy to the companions who love one another, as you did for your creations in the Garden of Eden." (Masechet Yoma, 1989, 85b). Thus, Yom Kippur is not only a day of atonement for the Jewish people, but also a day of spiritual transformation and profound joy, which springs from freedom from the burden of wrongdoing and a return to a state of original purity.

A parallel can be drawn between the state of repentance as seen by Orthodox teaching and the repentance done by the Jewish Christian on the feast of Yom Kippur. Mark the Ascetic, one of the most profound theologians of Christian asceticism, places a fundamental emphasis on repentance as an ongoing work, necessary for all people, regardless of their spiritual state. In his teachings, repentance is not just a one-time moment of remorse, but an ongoing practice that transforms the whole life of the believer. Mark emphasizes that repentance must be pursued by all people - sinners and righteous alike. There is no point in one's life when one can consider that one has reached perfection and no longer needs to repent. Even the spiritually saved need repentance in order to maintain and increase their connection with God. Even those who are "as godly as possible" need repentance, because neglecting small faults gradually leads to greater falls ("He who despises small things will fall by little and little" - Sirach 19:1). In essence, Mark Asceticus teaches that repentance is a living work, essential in maintaining man's relationship with God and in his progress on the path to perfection (Mark Asceticus, 1946, 222).

Elijah Ecdicul approaches repentance in a way that emphasizes the connection between the awareness of its necessity and human behavior in relation to sin. Elijah emphasizes that those who do not turn their thoughts to repentance live in a state of spiritual carelessness, which causes them to sin constantly. This reflects a rift between man and God, for the lack of repentance is a sign of a soul that does not seek correction. Elijah observes that repentance is

often prompted by an awareness of sin. Those who sin inadvertently are more likely to repent, but their occasions of repentance are not as frequent as those who sin willfully and constantly. In essence, Elijah Ecdicul sees repentance as a vital process, linked to awareness and responsibility, which protects the soul from a continual fall into sin (Ilie Ecdicul, 1948, 283).

Simeon the New Theologian offers a profound and distinctive perspective on repentance, placing it in significant contrast to theology. He approaches repentance as an essential stage, but distinct from the theological or contemplative state, highlighting the differences between the two. Repentance is seen as a necessary condition for drawing near to God, but it is a preliminary stage. The one who repents recognizes his unworthiness and sins, crying out to God for forgiveness and restoration. Simeon associates it with a state of heartbreak, necessary for the cleansing of the soul. Repentance is absolutely necessary to reach theology. Without it, there is no purification, humility or preparation for communion with God. It is an obligatory path that every soul, regardless of its spiritual calling or destination, must travel. Simeon the New Theologian describes repentance as an essential and valuable work, but he considers it a preliminary step on the way to union with God. If repentance is the state of one who recognizes his helplessness and sins, theology is the state of one who has entered into full communion with God and lives in light and glory. The two are not opposites, but complementary, each having its role in man's spiritual ascent (Simeon the New Theologian 1977, 51).

Repentance on Yom Kippur is an annual moment of collective and individual reconciliation, in which man reconnects with God and cleanses his soul for a new beginning. In contrast, Christian repentance is an ongoing work that transforms the believer's life and helps him or her to progress on the path to perfection. Both forms of repentance emphasize the need for humility, awareness of sins and cooperation with God for spiritual restoration.

5. Conclusions

Yom Kippur, known as the Day of Atonement, is one of the most important days in the Jewish religious calendar, with deep roots in the Old Testament. This day is dedicated to repentance, forgiveness and reconciliation with God, underlining its central role in maintaining the relationship between man and divinity. Complete fasting is a central element of the feast, with clear prohibitions on the consumption of food, drink and other physical activities. These rules are intended to facilitate introspection and spiritual closeness to God, offering believers an opportunity to transcend physical needs. The prohibition to work on Yom Kippur is biblically based (Leviticus 23: 28, 30, 31). It is seen as a way of avoiding distractions and allowing exclusive focus on repentance and prayer. Yom Kippur is described as a 'Shabbat of the Shabbats', symbolizing a high degree of sacredness.

The day is invested with a unique capacity to support atonement and spiritual reconciliation, being set up as a special time when wrongs can be completely wiped away, giving believers the opportunity to start afresh with a 'clean slate'. Yom Kippur is seen not just as a day of commemoration, but as a time of intrinsic spiritual energy that facilitates spiritual purification and renewal. This is a day when the Divine is more accessible, supporting the process of repentance. Rabbinic commentaries add a profound dimension to this holiday, emphasizing that it is not just a formal ritual but an active process of spiritual transformation. The rabbis emphasize the power of this day to change the lives of believers, to give them the opportunity to recover their lost spiritual level. Contrary to the perception that Yom Kippur is a sad day, the rabbis see it as a holiday of joy, derived from spiritual purification and freedom from the burden of wrongdoing. In conclusion, Yom Kippur is more than a religious tradition; it is a manifestation of the dynamic relationship between God and man, offering believers a framework for reflection, repentance and spiritual rebirth.

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Girolamo Savonarola:
A Great Preacher of the Middle Ages

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Abstract: Savonarola's profound religious seriousness and unwavering determination demand both admiration and careful analysis of the messages and decisions he made in his fight against the moral slippages of his contemporary society. His actions in Florence underscore the urgent need for religious reform, even if Savonarola's efforts influenced Martin Luther's Protestant Reformation to a small extent. It is essential to recognize that Savonarola anticipated the spirit and objectives of the reformers, paving the way for their efforts and thus facilitating the emergence of the Reformation. This paper explores Savonarola's contributions, providing a deeper understanding of his role in this pivotal historical period.

Keywords: Savonarola, Preacher, Middle Ages, Sermon, Apocalyptic, Florence, Dominican

Introduction. Short biography

Girolamo Savonarola was born on September 21, 1452, in Ferrara. His father, Nicollo Savonarola, was part of the small nobility of this Italian city. His mother, Elena Bonnacorsi, also from Mantua, was an ambitious woman who spared nothing in perfecting the educational process of the little Girolamo. He attended the University of Ferrara, where he studied medicine, drawing, music, and philosophy. Choosing his grandfather's profession, he studied medicine, but in the end, he gave up medicine because of the increasingly strong impression that the corruption of society gave him. Also, due to the embarrassment caused by the family's refusal to give birth to their daughter Laodamia, at the age of 23, he secretly left his father's house and went to Bologna, where he took on the Dominican habit (Schaff, 1882, 466). When he decided to embrace the monastic life, his predilection for St. Thomas Aquinas (Rotaru, 2005, 316-322) led him to choose the Dominican order; but he joined this order with the clear intention of remaining all his life a simple brother at the base of the hierarchy, in order to avoid the mixture of the profane and the scholastic which his studies implied. Nevertheless, he took the vows made in the monastery of San Dominic in Bologna in 1475, and even overcame his aversion to teaching the philosophy of Aristotle when his superiors had imperiously asked him to teach it, taking care, however, to avoid speculation in his lectures and to emphasize, whenever the opportunity offered, the superiority of Holy Scripture over all philosophical authority. Although he had desired to "be engaged in the most humble and servile duties of the brotherhood," he soon showed a "special capacity which led to his appointment as instructor of the novices" (McGeown, 2010, 3).

Savonarola thus began his monastic life in the Dominican Order. An interesting choice for the young Savonarola, considering that the Dominicans, being militant preaching monks, their first and most important task was to preach the word of God. While the Franciscans, which emphasized poverty, would have been more suited to Savonarola's austere nature, according to his biographer Lauro Martines, his desire to join the Dominicans clearly demonstrates that this monk was a militant fighter for Christ from the very beginning. The Dominicans allowed him to "transform people by preaching the word of God. He found in the Dominican Order the same combative power that he was to find in the use of the printing press" (Martines, 2006, 91).

As a young Dominican monk, Savonarola quickly became disillusioned with the wealth and ostentation he saw around him. Partly, this was rooted in childhood memories of the ducal courts and partly in the prevalence of nepotism and indecent patronage so prevalent in

Rome and elsewhere. He often suggested that many wicked and deceitful men had entered holy orders and were thus, in some cases, by their mere presence, perverting the Catholic faith in favor of an "external, pompous and heartless" model of Christianity. Savonarola, therefore, wrote his first highly critical and accusatory work on the Vatican. "*De Ruina Ecclesiae*" in which he openly condemned the Church, accusing it of having lost its role as mediator between the faithful and God (Boston, 2008, 94).

At the monastery, Savonarola studied Augustine and Thomas Aquinas and absorbed the teachings of the Holy Scriptures, of which he knew entire sections by heart. In Florence, there are still two copies of the Bible that contain detailed annotations in the margins of the text, made by Savonarola himself, between the lines or on added pages (The Vulgate, printed in Basel, 1491). The abbot of the monastery sent him to preach in Florence, one of the largest and most sumptuous cities in Europe at that time. Here he consolidated a strong reputation based on his austerity, sometimes ostentatiously displayed, as well as due to his scholastic and oratory qualities. Here in Florence, Savonarola would soon become abbot of the monastery of St. Mark (Burlamachi, 1829, 39), (in the premises of which the rooms where he lived can still be visited today). Savonarola's first attempt as a preacher was so unfortunate that, towards the end of his Lenten sermons, his audience numbered no more than twenty-five. He then announced to them that instead of preaching, he would, from that time on, devote himself exclusively to the study of the Holy Scripture. He did not, however, give up preaching, becoming a furious preacher against human decadence, and convinced that the wrath of God was about to fall upon the Earth (Schaff, 1882, 467).

The influence of Savonarola's sermons

To understand Savonarola's rise in Florence, we must mention his apocalyptic visions. He reinforced the consistent theme in Florentine history that the Florentines were a people to whom God had destined a special destiny. He described the millennium as an era that would leave the Florentines purified and at the forefront of the new Kingdom. One of the many aspects that explain Savonarola's popularity was his erudition which, "although neither profound nor original, was sufficiently extensive to arouse the interest of both learned humanists, such as Giovanni Pico della Mirandolla (1463–1494)" (Rotaru, 2016, 29-43), and of many Florentine men of letters (Hale, 1991, 292).

The theme of his first sermons was the presentation of certain passages from the Apocalypse in a manner that inspired terror and anxiety; from these passages he made his conclusions heard, with the tone and authority of a prophet, concerning the great crisis which "could be expected" for the Church of God, and unheard-of misfortunes for it, a wrath from which there was no escape except through repentance (Burlamachi, 1829, 4).

Crowds waited for hours at the doors of the cathedral for the preacher's arrival, and Villari estimated that the crowds who listened to his sermons numbered 10,000 or 12,000 people. Eisenbichler appreciates that in his heyday Savonarola preached to crowds of about twenty thousand people. (McGeown, 2010, 3) The feelings of the listeners swayed to the preacher's voice like fields of grain blown by the wind, here burning with indignation, here softening with tears. "I was overcome with weeping and could not continue," wrote one listener in noting a sermon, and Savonarola himself felt the strain peculiarly and often sank into his chair completely exhausted (Schaff, 1882, 468). To the enthusiasm of the crowds for the preacher were added gratitude and reverence for the messenger of God, and the effect of all these feelings combined was so powerful and so contagious that it seemed as if the most beautiful age of the Church since its beginnings had been restored (Burlamachi, 1829, 39).

To enjoy their share of the miraculous manna, which was descending upon them in such abundance from heaven, the inhabitants of the neighboring towns and hamlets abandoned their homes, and the mountain people descended from the Apennines, setting their eyes on Florence. There, crowds of pilgrims hurried every morning, as soon as the gates were opened

at the first break of dawn, and were always received with brotherly hospitality. They were embraced in the street like brothers, even before their names were known, and there were some pious citizens who hosted in their homes as many as forty people at a time (Burlamachi, 1829, 4).

The climax of his sermons

Obviously, with such a sharp attitude in the most important city of the Renaissance, it did not take long at all for Savonarola to make implacable enemies. Among them were the members of the powerful and influential Medici family, the Palleschi (was the name adopted by the Medici partisans, from the three Palle or balls on the family coat of arms. They gave Savonarola's friends the nickname *piagnoni*, the whiners; and they responded by calling their opponents the lukewarm, the term actually used in the original, for which I have proposed replacing it with the name of the faction, easier to use and more historical) faction, who denounced him at the court in Rome every day and threatened him, loudly, with the gallows.

The death of Pope Innocent III, accurately predicted by Savonarola, coincided with two great events, namely the flight of the Medici family from the city and the invasion of foreign armies. His sermon, full of threats, is closely linked to national events. Italy, Rome and Florence are insistently mentioned. In a harsh and exuberant criticism, he accuses monks and church figures of being responsible for "this storm", for "these evils". He predicted that God would send punishments on His church to purify it: "The church will be reformed, but Italy will first be scourged, and her punishment is imminent." The monk's prophecies seemed to be nearing fulfillment when, in 1494, news reached Florence that the French king, Charles VIII, had invaded Italy. This happened while Savonarola was preaching on the text "Behold, I bring a flood of waters upon the earth" (Genesis 6:17). This coincidence only served to enhance his reputation (Rops, 1961, 229).

The occupation of Florence by the troops of King Charles VIII of France led to the temporary expulsion of the Medici family. Savonarola saw in Charles a new Cyrus whose coming could free Florence from its political bonds and initiate a new era of civic freedom. He also predicted Charles's subsequent withdrawal. Philippe de Commines (a writer and diplomat at the court of the French king), who visited Savonarola in the monastery of St. Mark, after the trials that followed Charles's arrival in Italy began, left impressed by the piety and candor of the monk, and declared that he had predicted with certainty, to him and the king, "things that no one had believed at the time, but which have come true completely since then." The event was speculated to the maximum by Savonarola, who saw in this an unexpected chance to occupy and reorganize the sumptuous Florence according to his beliefs. Savonarola convinced the French king to appoint him head of the government council in Florence. Having reached the supreme position, for four years (1494-1498), Savonarola established the law of moral, Christian principles. Under the power of his new position, Savonarola also took a series of measures appreciated by the masses. Among these were the total prohibition of usury, the prohibition of wealth taxes, and the prohibition of luxury in any form. Towards the height of his life, through his sermons, he was particularly dedicated to the desire to see the lives of the Florentines freed from any pagan traces that led to the exacerbation of the humanist cult of that period. As a self-proclaimed prophet, as an instrument of God for Florence, Savonarola began a program to cleanse the city of its long-revered humanist vanities. Obsessed with the image of human wickedness that he saw, he wanted to rid Florence of all kinds of vices; the monk had a firm attitude of condemnation towards frivolity, poetry, sex, gambling, elegant clothes and jewelry. There were to be no more images of the nude and no artistic bowing to pagan deities (Cavendish, 1998, 34).

Once, under the spell of the monk's sermon, the whole of Florence seemed to have taken the path of religion. Wives left their husbands and went to the convent. Others married, vowing marital abstinence, and Savonarola even dreamed that the city might attain such a

state of perfection that marriages would cease altogether. The people attended services and received communion every day; Fra Bartolomeo threw his nude studies on the fire, and, for a time, continued to believe that it was a sin to use one's hands to paint, for they should be constantly joined together for prayer. There was enthusiasm but no regeneration. A reaction was certain to follow, and it is a wonder that Savonarola enjoyed such great confidence from the people almost to the end of his life (Schaff, 2002, 476).

Savonarola forbade the carnivals and country festivals celebrated by the Florentines. He established real secret police that sought out and identified the inhabitants who were fond of any form of worldly entertainment, art or luxury. He organized, on the occasion of the so-called "Bonfire of Vanities", in 1496 and 1497, which was a huge bonfire into which the inhabitants of Florence had to throw their chess sets, along with other "tools of sin" such as mirrors, playing cards, carnival masks, luxurious clothes, art objects, expensive things, statuettes and paintings that represented nudes, even some books and writings considered indecent or heretical. Even the Renaissance painter Botticelli was forced to throw his own paintings on mythological themes, but sprinkled with female nudes, into the flames. Savonarola believed that all ancient pagan culture should be eliminated, as well as art insufficiently imbued with Catholic Christianity.

The biblical element was also a prominent feature of his sermons. His most famous discourses were on the ark, the Exodus, the prophets Haggai, Hezekiah, Amos, Hosea, and the Apocalypse of John. He insisted on the authority of Scripture. "I preach the regeneration of the Church," he said, "having Scripture as my only guide" (Rudelbach, 1835, 333-336). He presents an elaborate description of Savonarola's attitude towards the Bible and quotes from one of Savonarola's sermons on Exodus as follows: "The theologians of our time have defiled everything by their indecent and deafening disputes. They know nothing at all about the Bible, they do not even know the titles of its books."

Unlike many theologians of his time, he preached not much from the Holy Fathers but from Scripture and in the vernacular. Consequently, the people could understand him and profit by his sermons. Savonarola had an encyclopedic knowledge of the Bible. Crawford describes Savonarola as "an ardent reader of the Bible," for he "knew it almost by heart, from Genesis to Revelation." Old agrees: "His knowledge of Scripture was considered extraordinary by his contemporaries. In fact, it was said that he knew much of the Bible by heart" (Huges, 1999, 570). This knowledge was to be of great use to him when, in his last days before his execution, deprived of his Bible, he wrote his Prison Meditations on Psalms 31 and 50: "references to Scripture are found everywhere… slight omissions or departures from the Vulgate suggest that Savonarola did not have the Bible at hand when he wrote and that he quoted from memory" (Donnelly, 1994, 20).

The time had come to realize Savonarola's vision of a theocratic government ruled by Christ in Florence. The expulsion of the Medici made possible a reorganization of the state, and the new constitution—largely created by Savonarola—involved him in the struggle between civic and political factions. In his grand sermons on Haggai, during the Lent of the Nativity of the Lord in 1494, and on the Psalms in 1495, Savonarola clearly embarked on the sea of politics. "The Lord has led my boat out into the open ocean!" he exclaimed from the pulpit. Rebuking God, for thrusting this daunting task upon him, he declared: "I will preach if I must, but why should I interfere in the government of Florence?" The Lord said to him: "If you want to make Florence a holy city, you must lay it on solid foundations and give it a government that glorifies piety." The preacher undertook to do so (Eisenbichler, 1999, 489). Savonarola's sermons had a profound impact on the crowds. A contemporary chronicler noted, "The eyes of all stared in horror, tears flowed down their cheeks. People beat their fists on their chests and begged God for mercy, screaming." At that time, the city's churches were cramped, and men and women walked the streets in dirty, long robes.

The decline of Savonarola

Perhaps this would have been the moment when Savonarola could be content with what he had achieved and maintain a more withdrawn figure. But it was not to be, pride, the very sin against which Savonarola fought daily in public through sermons, was the one that gnawed at his soul imperceptibly. Enthused by the fact that the masses of people had accepted not only his own religious reform, but also his political opinions regarding the declaration of a possible theocratic democracy, Savonarola began to aim higher and higher.

He, therefore, wanted to enter politics, and sought support in the so-called party of the "*Weeping Men*" made up of tradesmen, artisans, knights and petty nobles, in open opposition to that of the Florentine nobles, entitled equally bizarrely, "*The Angry Ones*". Meanwhile, Savonarola continued to draft new and new laws, each more restrictive and sometimes absurd. Thus, in his opinion, anyone who even verbally opposed the leadership he had established was automatically considered a personal enemy of Jesus Christ, with all the consequences that then followed this. It did not take long, and the news of Savonarola's exploits reached the ears of the new Pope, who was none other than Alexander IV Borgia, from the feared Borgia family that was in open conflict with the governor of Florence. Unfortunately for Savonarola, his political and ideological enemies in Italy, plus the Florentine clergy who could no longer tolerate his dogmatic interpretations and measures, also joined forces against him. Their criticism, initially timid, would culminate in open attempts to silence him or banish him from the city altogether. At this point, fearing that the situation would degenerate, Pope Alexander IV summoned Savonarola to the Vatican for discussions and clarifications, including explaining his prophetic visions to the higher authorities. Feeling cornered on all sides, Savonarola refused, citing health reasons and the dangers that might await him on the road to Rome. His old rival in the pulpit, the monk Mariano di Gennazzano, and other enemies were in Rome plotting against him, and the Medici family was quickly gaining favor with the pope.

Alexander's first letter, dated September 9, 1495, forbidding the monk to preach, condemned Savonarola's foolishness in interfering in Italian political affairs and announcing that he was a special messenger sent by God. In reply, Savonarola answered the accusations and continued to preach. On October 16, 1495, the sovereign pontiff forbade him from preaching publicly or privately. Pastor remarks: "It was as clear as could be that Savonarola was guilty of disobedience to papal authority" (Pastor, 1898, 66).

For five months the monk remained in seclusion in the monastery, but on February 17, 1496, at the request of the lordship to preach the Lenten sermons, he again ascended the pulpit. Stating that the pope could err, he adopted a bold position. "The Pope," he said, "may order me to do something that is contrary to the law of Christian love or the gospel. But if he really gives me such an order, I will tell him, you are not a shepherd. Not the Roman Church, but you are wrong."

From then on, he raised his voice, as he had never done before, against the corruption of the papal city. Preaching on Amos (4:1) on February 28, 1496, he exclaimed: "Who are the fat cows of Bashan on the mountains of Samaria? They are the courtiers of Italy and Rome. Or, are they not? A thousand is too little for Rome, ten thousand, twelve thousand, fourteen thousand are too little for Rome. Prepare, alas, Rome, for terrible will be your punishments!" (Perrens, 2018, 471). Moreover, he resumed his sermons with increased violence and fervor. This time, the target of his public accusations was the Pope himself and the entire Vatican Curia. For Savonarola, the Pope had become an "atheist," a "devil," a "corrupt pagan," and many other things. Thus, he was accused of heresy in 1495, after which the Pope forbade him from preaching. Instead, Savonarola continued to ignore the papal appeal.

On May 12, 1497, for "not having submitted to our Apostolic reprimands and orders" and being "suspected of heresy," Alexander declared him excommunicated. Everyone was forbidden to listen to the condemned man or speak to him. Initially, Savonarola obeyed the excommunication order and stopped preaching. Between May 1497 and February 1498, he

remained silent. The longer he stayed away from his pulpit, the worse the morals of the people became. Therefore, Savonarola was asked by his friends to resume preaching in order to stem the tide of evil that was threatening the city once again.

On February 11, 1498, he defied the validity of his own excommunication and once again ascended the pulpit of the cathedral. Before a huge crowd, he described the priest as a humble instrument of the Almighty, saying that when God withdraws, "prelates and popes are nothing but a broken iron tool. […] And if a prelate orders what is contrary to his divine life in piety and charity, not only should you not obey him, but he is also worthy of damnation." Another time, he said that the pope could be misled not only by false reports but also by his own wickedness, as in the case of Pope Boniface VIII, who was a bad pope, beginning his pontificate like a fox and ending it like a dog (Schnitzer, 1904, 144).

The Pope still had one weapon to make Savonarola yield—the interdict of Florence. He threatened the city with this if the Signoria did not send "this son of the impure" to Rome or throw him into prison. If the former option was followed, Alexander promised to treat Savonarola as a father would his son, provided he repented, for he "did not wish the death of a sinner, but that he might turn from his way and live." But while some members continued to express confidence in the purity of the monk's motives, the majority came to adopt the position that it would have been more expedient to silence the preacher than to incur the papal interdict. At the public meeting called by the Signoria on March 9, 1498, to decide the course to be taken, considerations of efficiency prevailed. The Pope, as the Vicar of Christ, has authority directly from God and must be obeyed. A second consideration was the financial straits of the municipality. On March 17, 1498, the decision of the Signoria was communicated to Savonarola, namely that from that date he was to abstain from preaching, and the following day he preached for the last time.

In his last sermon, Savonarola acknowledged that it was his duty to obey the mandate. His mind had worked out a course to be taken: from the pulpit he had hinted at the convening of a general council as a last resort. But the course of events suddenly took an unexpected turn. Florence was astonished at the rumor that steps were to be taken to determine whether Savonarola's claims were true. The challenge (ordeal by fire) came from a Franciscan, Francesco da Puglia, in a sermon at the Holy Cross, in which he denounced the Dominican friar as a heretic and false prophet. If Savonarola had not been accused in this ordeal, it would have been a clear sign that Florence would follow him. The challenge was accepted by the Abbot Domenico da Pescia, a friar of St. Mark's and a close friend of Savonarola, a man whose pure life was recognized. He took his friend's place, stating that Savonarola should be reserved for higher works. Francesco da Puglia also withdrew, and Julian Rondinelli, a Franciscan friar, took his place against his will. Savonarola himself disapproved of the ordeal (Landucci, 1883, 165, 166).

The execution was authorized by the Signoria and set for April 7. The execution further inflamed Savonarola's friends. When he announced it in a sermon, many women exclaimed that they wished to be partakers together. Other monks from St. Mark's and hundreds of young men announced that they were ready to pass through the fire out of respect for their spiritual director.

The solemnity was set for eleven o'clock. When the hour came for the procession to begin, Savonarola was giving a sermon. He had again told the people that his work did not need miracles and that he had always sought to justify himself by signs of virtue and, he declared, just as on Mount Carmel, we could expect miraculous divine intervention, but only in response to prayer and humility. The storm that had descended on the city, the delay in preparations, and the fall of darkness caused the Signoria to cancel the execution (Schaff, 1882, 479-480).

Savonarola's power was over. The spell of his name was broken. There was a feeling that the spectacle was a farce. The popular threat was growing, and a guard barely managed to prevent a violent attack on Savonarola as the procession returned to St. Mark's.

The view that Savonarola's political enemies, the Arrabbiati, had fallen into collusion with the Franciscans, and that the delay in the square, caused by various objections, was actually a ruse to postpone the execution, enjoys much support. Florence was furious at having this situation imposed on it. The next day St. Mark's was stormed by the mob. The Signoria voted for Savonarola's immediate banishment. The Pope, upon receiving official news of the events in Florence, sent word to congratulate the lordship, fully pardoned the city, and granted it the right to tithe for three years. He ordered that Savonarola's trial be commenced, not neglecting, if necessary, the use of torture.

Arrest and death sentence

Excommunicated, Savonarola was arrested by the new Florentine authorities along with two of his most fanatical followers, the monks Domenico and Salvestro. All three were tried by an inquisitorial tribunal and cruelly tortured on charges of heresy (Rotaru, 2019, 304). On May 23, 1498, Savonarola and his faithful disciples were led, amid the shouts and boos of the crowd, to the place of execution. There, they were hanged, then burned at the stake. It is said that a priest asked Savonarola how he felt now in the face of his own execution. The monk answered briefly and calmly: "I feel very well. Christ suffered as much for me." These were to be his last words. His disciples were hanged first, then his turn. The bodies of the three were burned at the stake in Piazza della Signoria, and their ashes were then thrown into the Arno River, which runs through Florence (Landucci, 1883, 167, 168).

His figure would not be easily forgotten. In 1919, the Italian People's Party declared him a true champion of social justice, and after 1945, Savonarola was taken as a model for the reform of Catholicism. Moreover, the Roman Catholic Church decided in 1988 to canonize Girolamo Savonarola, but the complete process of canonization was blocked by the powerful and influential Jesuit Order, whose members still consider him a heretic.

Conclusion

The exalted tone of Savonarola's impassioned sermons, the invectives against the high church hierarchy, the call to the original purity of Christianity, the proclamation of Florence as the kingdom of Christ and interpreted Charles VIII's invasion as a punishment from Heaven—these ideas and attitudes were those of a preacher from the Middle Ages. The meaning of his activity, which far exceeded the sphere of religious life, along with his active involvement in the social and political life of Florence—which he dominated for four years—made the preacher Savonarola a major political figure who aimed for a reform of society in its entirety. His sermons were shocking and enthusiastic speeches, anchored in the word of Scripture, with a prophetic, penitential and apocalyptic opening, with numerous insertions of a political nature. His sermons shook Florentine society to its foundations, giving birth to love and hate alike, moving hearts, providing hope, and shattering ideals—a question mark of the mentality of the people of that time.

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The Concept of Evangelicalism
Through the Prism of D.W. Bebbington's Quadrilateral

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Abstract: The evangelical movement, or evangelicalism, is a landmark of extraordinary value in Christianity. Therefore, it is important to seek to understand what defines this movement, its sources, and the major theological themes of the evangelical movement. In this context, Bebbington's quadrilateral is an essential tool for clarifying evangelical identity, providing a coherent framework for analysis. The four foundational features—*biblicism, crucicentrism, conversionism*, and *activism*—not only define the evangelical movement but also highlight its impact on global Christianity. Given the growing diversity of the evangelical movement and contemporary theological challenges, we recognize that new complementary or alternative definitions may emerge in the future. Nonetheless, Bebbington's quadrilateral will continue to be an essential reference point in any attempt to define evangelicalism. Its clarity and depth make it a valuable tool for understanding evangelical identity, both past and future. Studying its sources and theological themes is not just an academic exercise but a necessity for those who wish to understand the dynamics of contemporary Christianity. Moreover, it allows us to appreciate how the evangelical movement continues to shape the Church's spirituality and mission in the world.

Keywords: Christianity, Evangelicalism, Biblicism, Crucicentrism, Conversionism, Activism, Patrulater

The Evangelical Movement - main theological themes

The evangelical movement has been and continues to be a factor of change in society, promoting both spiritual reforms and social initiatives (Rotaru, 2017, 57–76). Through its strong emphasis on the authority of Scripture and the personal experience of faith, evangelicalism has contributed significantly to the development of Christian theology and practice.

The Evangelical Dictionary of Theology defines the evangelical movement as "a movement in Modern Christianity, cutting across denominational and confessional boundaries, which emphasizes conformity to the fundamental doctrines of the faith and mission done under the impulse of mercy and urgency. One who identifies with this movement is called 'evangelical' and is a man who believes and proclaims the gospel of Jesus Christ" (Elwell, 2012, 444).

The Bible defines the Gospel in Paul's first epistle to the Corinthians in chapter 15, verses 1-4, as follows: "1) I make known to you, brethren, the gospel which I preached to you, which you received, in which you abode; 2) by which you are saved, if you hold it as I preached it to you; otherwise you believed in vain; 3) I taught you before all things, just as I also received, that Christ died for our sins according to the scriptures; 4) that he was buried, and rose again the third day according to the scriptures" (King James Version (KJV) 1 Corinteni 15:1-4).

Theologically, the evangelical movement emphasizes the following themes: (a) the sovereignty of God; (b) Scripture - the revelation of God; (c) the total corruption of man (Rotaru, 2024, 301-318); (d) the atonement made by Jesus Christ for sin on Calvary's cross; (e) through faith in Jesus Christ one receives salvation as an act of unmerited grace; f) the proclamation of the word of God, the written word being the foundation of the preached

word; g) the visible and personal return of Jesus Christ to establish his kingdom; h) faith in the Trinity, the incarnation of Jesus Christ, the virgin birth, the resurrection.

Sources of Evangelicalism

According to D.W. Bebbington, in his famous work "Evangelicalism in modern Britain - A history from the 1730s to the 1980s", the American theologian Jonathan Edwards stands at the roots of Evangelicalism (Bebbington, 1994, 3).

Jonathan Edwards, considered the greatest American evangelical theologian, began his work as president of the College of New Jersey, later Princeton University, and was also the theologian of the First Great Spiritual Awakening. He described divine all-sufficiency, human sinfulness, conversion - the radical change of heart, and authentic Christianity. For Jonathan Edwards, the real Christian, who rejoices in the assurance of salvation, has a holy boldness, but he also has less self-confidence and more modesty. The real Christian is less prone than others to be shaken in the faith, but he is more inclined than others to be moved by the solemn warnings and threatenings of God, as well as by calamities that come upon others (Murray, 2021, 302).

Again Jonathan Edwards, the theologian at the origin of Evangelicalism, has shown that true religion consists largely of holy emotions, that the author of human nature has made emotions the source of all human action, and that religious things cannot be a burden on the human soul except in so far as they affect it. At the same time, Holy Scripture everywhere places religion in the sphere of the emotions, speaking of fear, hope, love, hatred, desire, joy, sorrow, grief, gratitude, compassion, zeal, and presents true religion as summed up in love, which is the highest emotion and the source of all other emotions. The religion of the most renowned saints of Scripture, consisted in holy emotions (Edwards, 2023, 23-45).

Defining Evangelicalism through Bebbington's patrulater. The relevance of the patrulater

D. W. Bebbington's quadrilateral still occupies an important place today in defining the evangelical movement (Anca, 2024,115-116), since the four proposed characteristics provide a functional definition of evangelicalism, having received the most criticism in the literature. Thus, the four key concepts proposed to define evangelicalism are: conversion, activism, biblicism/biblicalism, and crucicentrism (Bebbington, 1994, 3-17).

Conversion, the first characteristic of evangelicalism, is linked to major theological convictions and is the common goal of evangelical churches and their members. According to D. W. Bebbington, conversion was the only gateway to living Christianity, it was less likely as a person grew older, and it was essential that the preacher himself be converted. At the same time conversion brings prosperity to the church and solves many social problems because a converted person works hard, saves money and helps his neighbor.

Activism - the second significant feature of evangelicals symbolized the great emphasis on service, with members of the communities expected to be actively involved in serving others (Anca, 2024, 115). The spreading of the gospel and the active involvement in ministering to others flowed from the first feature, conversion. Efforts to spread the gospel took the form of attending meetings, visiting the sick, preaching sermons five or six times a week, giving encouragement, teaching and admonitions, organizing Bible classes, creating missionary societies, giving up precious time for the study of literature that was not imperatively necessary, doing work in the mission fields to bring "roads" since action was considered the life of virtue and the world the theater of action (Bebbington, 1994, 10-12).

Biblicalism - is the reverence for the Bible and the conviction that the whole truth of God is found in the pages of this book. The evangelicals' devotion to the Bible has led them to

spend hours and hours in study, convinced that they can thus enter into the presence of the infinite and eternal God (Rotaru, 2012, 5).

The evangelicals' belief concerning the Bible could be summarized as follows: a) the Bible is inspired by God; b) the Bible is absolutely true; c) it is truth without any mixture of error; d) the message of the Bible must be conveyed and its devotional use encouraged; e) the most widely read books of the Bible were the Gospel of John, the first epistle of John, Psalms, Genesis, Isaiah; f) the Bible verse that inspired most preaching was Galatians 2: 20 - "I have been crucified with the Histos, and I live; yet it is no longer I who live, but Christ lives in me. And the life I now live in the flesh I live by faith in the Son of God, who loved me and gave himself for me" (Bebbington, 1994, 12-14).

Crucicentrism - The Evangelical movement set out to bring back the great Theme of the Cross and all that it entails, with nothing more important than the doctrine of the Atonement. Among evangelicals, the atonement eclipses even the incarnation, the Cross of Christ being the salvation of men, what distinguished evangelicals from other theological schools was precisely their belief in a substitutionary atonement. Crucicentrism, as an essential element of the evangelical movement, emphasizes that Christ's death on the cross is the central point of the divine plan of salvation. This conviction derives from a theological vision in which the Cross is not merely a symbol of suffering but the essence of the whole work of redemption (Rotaru, 2005, 33-160).

In the Gospel tradition, the Cross is not just an episode in salvation history, but the very heart of the Gospel. Through Christ's sacrifice, man receives forgiveness of sins and reconciliation with God, which makes the doctrine of the atonement even more important than the incarnation. This profound emphasis on the Cross determines not only the personal faith of the evangelicals, but also the way in which they proclaim the Gospel message, transforming the whole theology into one centered on Christ's substitutionary sacrifice. Thus, regardless of modern theological challenges, for evangelicals, CruciCentrism will remain the central focus of their faith and message, the foundation on which their entire spirituality is built.

Conclusion

Bebbington's quadrilateral is indeed an essential tool for defining the evangelical movement, providing a clear and concise framework of the fundamental features of evangelicalism: biblicism, crucilicalism, crucicentrism, conversionism and activism. Although scholarly discussions on the nature and limits of evangelicalism continue, the definition proposed by David W. Bebbington remains one of the most influential and widely used in theological and historical studies. The flexibility and clarity of this model explain why it has been so widely accepted by scholars and religious leaders around the world. However, given the growing diversity of the evangelical movement and contemporary theological challenges, we appreciate that new complementary or alternative definitions may emerge in the future. Despite modern theological challenges and evolving perspectives, the fundamental features ensure that the evangelical movement retains its distinct identity and enduring impact on Christianity.

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