
Technological Turbulence and Its Impact on Entrepreneurial Behavior Social Norms and Ethical Practices in Digital Business Environments

Mohamed Suhaimi Yusof¹*, Ahmad Fauzi Ahmad Zaini²

¹ Faculty of Business and Accountancy, Universiti Poly-Tech Malaysia, Malaysia

² Institute of Graduate Studies, Universiti Poly-Tech Malaysia, Malaysia

*Corresponding Author: suhaimi@uptm.edu.my

HOW TO CITE:

Mohamed Suhaimi Yusof,
Ahmad Fauzi Ahmad Zaini (2026).
Technological Turbulence and Its
Impact on Entrepreneurial
Behavior Social Norms and Ethical
Practices in Digital Business
Environments.

International Journal of Special
Education, 41(19s), 1400 - 1423

ABSTRACT:

Technological turbulence has become a defining feature of contemporary digital business environments, reshaping entrepreneurial behavior, social norms, and ethical practices. Rapid developments in platform architectures, algorithmic governance, data driven business models, and regulatory expectations increasingly mediate how entrepreneurs create value and how legitimacy and acceptable conduct are evaluated. This study examines how technological turbulence influences ethical and normative dynamics in digital entrepreneurship by integrating insights from entrepreneurship research, platform governance, and business ethics. The analysis demonstrates that ethical outcomes in digital business environments are not solely the result of individual moral judgment but emerge from structural conditions that shape incentives, distribute accountability, and accelerate behavioral adaptation. Governance volatility, manipulative market practices, contested data consent, algorithmic opacity, and uneven entrepreneurial capabilities are identified as interconnected mechanisms through which technological turbulence reshapes entrepreneurial conduct and norm evolution. The findings indicate that rapid technological change destabilises normative reference points, encouraging adaptive strategies that prioritise visibility, growth, and short term performance, which may normalise ethically questionable practices over time. Data intensive marketing systems and automated decision making further complicate ethical responsibility by diffusing accountability across multiple actors, while capability gaps among small and medium enterprises intensify ethical fragility. The study contributes to the literature by framing ethical entrepreneurship as an embedded and dynamic capability

COPYRIGHT STATEMENT:

Copyright: © 2026 Authors.
Open access publication under the
terms and conditions

of the Creative Commons Attribution
(CC BY)

license (<http://creativecommons.org/licenses/by/4.0/>).

org/licenses/by/4.0/).

within digital ecosystems and emphasising the importance of aligning entrepreneurial practices with transparent governance mechanisms and evolving social expectations to sustain trust and legitimacy.

Keywords: Technological, Turbulence, Entrepreneurship, Ethics, Digital

1. Introduction

Technological turbulence increasingly defines the competitive and institutional conditions of contemporary digital business environments, where rapid shifts in platform architectures, data practices, algorithmic governance, and regulatory pressures reshape how ventures create value and how societies evaluate that value. In entrepreneurial research, turbulence is not merely a background condition but a dynamic force that changes opportunity formation, resource mobilization, and the temporal logic of decision making (Jaworski & Kohli, 1993). In digital markets, the pace of technological recombination expands the scope of entrepreneurial agency while simultaneously increasing uncertainty about what constitutes legitimate and acceptable conduct (Nambisan, 2017). This matters because entrepreneurship is not value neutral, it generates productive outcomes but can also incentivize unproductive or destructive behaviors when incentives and governance are misaligned (Baumol, 1990). Early internet cases already demonstrated that turbulent innovation cycles can blur ethical boundaries and accelerate norm shifts, especially when enforcement and public understanding lag behind technological capability (Hall & Rosson, 2006). More recent scholarship similarly recognizes that digital technologies democratize entrepreneurial participation while amplifying strategic volatility, imitation speed, and reputational fragility across ecosystems (Lamine, 2023). These dynamics warrant renewed attention to how entrepreneurial behavior, social norms, and ethical practices co evolve under technology driven disruption (Si et al., 2023).

The ethical stakes of technological turbulence are heightened by the platformization of commerce, where intermediaries shape market access, attention, and trust through design choices and rule enforcement. Platforms act as institutional actors that structure entrepreneurial possibilities by orchestrating multi sided interactions, controlling data visibility, and configuring reputational signals, often at scale (Parker et al., 2016). At the same time, platform governance is distributed and layered, involving firms, users, states, and civil society, which produces ambiguity about accountability when harms emerge (Gorwa, 2019). The politics of platforms further complicates ethical evaluation because the term platform can function rhetorically to signal neutrality while embedding discretionary power in ranking, moderation, and access decisions (Gillespie, 2010). In turbulent settings, entrepreneurs adapt to shifting platform incentives, for example by optimizing content to algorithms or rapidly pivoting business models, but such adaptation may also normalize ethically questionable practices such as covert persuasion, counterfeit diffusion, or regulatory arbitrage. Empirically, turbulence can therefore be expected to affect not only performance outcomes but also the moral framing of decisions, as entrepreneurs interpret what is permissible within the evolving rules of digital exchange. This suggests that ethical practices in digital business environments should be analyzed alongside platform governance and institutional pressures rather than treated as purely individual choices.

Social norms form an essential bridge between technological turbulence and ethical practices because norms define what audiences expect, condemn, and reward in markets that increasingly depend on visibility and collective judgment. Norms operate through both injunctive expectations, what people believe ought to be done, and descriptive expectations, what people believe is commonly done, and these expectations can shift quickly when digital diffusion accelerates imitation (Cialdini et al., 1991; Yusof, 2026). In online business environments, norms are shaped by community standards, influencer cultures, peer reviews, and platform mediated feedback, producing fast moving legitimacy signals that can either constrain or enable entrepreneurial conduct. Norm change can be constructive, encouraging transparency and responsible marketing, yet it can also normalize opportunism if unethical tactics become perceived as standard practice under competitive pressure. Institutional theory clarifies that legitimacy is not only legal compliance but also alignment with socially constructed expectations across industries and communities, which is especially unstable during periods of innovation and disruption (Scott, 2013). Accordingly, technological turbulence can destabilize normative baselines by making prior standards obsolete, introducing new categories of risk, and reshaping moral attention toward novel harms such as data exploitation or deceptive interface design. This article therefore positions social norms as both an outcome of turbulence and a mechanism through which turbulence influences ethical practices, with entrepreneurs acting as both norm takers and norm shapers.

Ethical practices in entrepreneurship require conceptualization beyond compliance checklists, particularly in digital contexts where harm can be indirect, distributed, and difficult to attribute. Contemporary work defines entrepreneurial ethics as careful consideration of social norms, stakeholder welfare, and value creation

throughout the entrepreneurial process, highlighting that ethical entrepreneurship is enacted through everyday choices in product design, marketing, data handling, and community engagement (Daradkeh, 2023). The moral psychology tradition further supports a process view, where ethical behavior depends on moral sensitivity, moral judgment, moral motivation, and moral character, all of which can be affected by time pressure and competitive uncertainty (Rest, 1986; Yusof, 2024). Technological turbulence may degrade moral sensitivity by increasing cognitive load, shorten decision horizons, and intensify rationalizations that frame ethically ambiguous actions as necessary for survival. Yet turbulence can also stimulate ethical innovation, such as improved traceability, stronger consumer protection mechanisms, or more inclusive value creation models. Recent syntheses show accelerating scholarly attention to the ethics entrepreneurship interface, indicating that the field recognizes ethics as integral to entrepreneurial outcomes rather than peripheral (Uriarte et al., 2024). What remains insufficiently resolved is how ethics interacts with the rapid recombination of digital technologies and the evolving norms of platform mediated markets. Addressing this gap is consequential for researchers and policymakers who seek to foster innovative ecosystems without enabling harmful or exploitative entrepreneurial behaviors.

Digital business environments intensify these concerns because they amplify scale and speed while reducing the friction that traditionally constrained opportunism. In many platform mediated markets, entry barriers are lowered through ready made infrastructure, logistics integration, and automated advertising, which can broaden participation but also increase the volume of low quality, misleading, or harmful offerings. At the ecosystem level, digital entrepreneurship scholarship notes that entrepreneurial processes are less bounded and more relational, embedded in networks of

complementors, users, and algorithmic intermediaries (Nambisan, 2017). Recent reviews similarly emphasize that digital entrepreneurship is increasingly shaped by ecosystem dependencies and innovation dynamics rather than firm level capabilities alone (Camps et al., 2025). Empirical studies show how digital platforms can enhance entrepreneurial innovation and effectiveness by improving information flows and resource access, but these same mechanisms can support manipulation when attention and data become primary currencies (Xie et al., 2024). In parallel, research on the dark side of digitalization highlights how digital infrastructures can generate new forms of harm and contested legitimacy through discourse dynamics and polarization, reinforcing the need to treat ethical evaluation as a socio technical problem (McCarthy et al., 2023). Taken together, these insights motivate an introduction that frames technological turbulence as a multidimensional driver of entrepreneurial conduct, norm evolution, and ethical practice, rather than an isolated market condition.

The relevance of this topic has increased further as digital entrepreneurship becomes central to economic development narratives, while public expectations regarding responsibility, privacy, and fairness grow more stringent. Policy oriented work on digital entrepreneurial ecosystems underscores that digital capability, institutional quality, and governance capacity jointly shape entrepreneurial outcomes, implying that ethical practices are influenced by ecosystem level constraints and supports (Yusof, 2025). At the same time, research on responsible entrepreneurship indicates that legitimacy and stakeholder acceptance increasingly depend on responsible conduct, which can be contingent on contextual factors and institutional pressures (Frank, 2024). Moreover, digitalization is observed to enable organizations, including social enterprises, to scale economic and societal value creation, strengthening the argument that

ethical practices should be considered a strategic capability in turbulent environments rather than a constraint on growth (Kotiranta et al., 2024). In emerging markets and traditional sectors, evidence shows that digital technologies drive business model innovation through agility and absorptive capacity, suggesting that turbulence interacts with learning mechanisms that may also shape ethical reasoning and risk perception (Abuseta et al., 2025). These developments create a timely setting for examining how entrepreneurs interpret and respond to turbulence, and how social norms and ethical practices evolve alongside technological change in digital business environments.

Against this backdrop, this article focuses on three interrelated constructs that are often studied separately, technological turbulence, entrepreneurial behavior, and social normative ethical alignment. First, technological turbulence captures rapid changes in technology that alter products, processes, and market structures, increasing uncertainty and requiring continual adaptation (Jaworski & Kohli, 1993). Second, entrepreneurial behavior encompasses opportunity recognition, experimentation, and strategic action, which in turbulent digital settings may include improvisation, rapid iteration, and platform specific optimization (Lamine, 2023; Si et al., 2023). Third, social norms and ethical practices describe the evolving standards of acceptable conduct and the practical routines through which entrepreneurs operationalize values, compliance, and stakeholder commitments (Cialdini et al., 1991; Daradkeh, 2023). This integration is important because research frequently acknowledges the promise of digital entrepreneurship while under specifying the ethical and normative mechanisms through which turbulence shapes behavior. In addition, the governance structure of digital platforms implies that ethical practices must be understood within socio technical systems, where design, rulemaking, and gatekeeping

interact with entrepreneur incentives (Gillespie, 2010; Gorwa, 2019). By framing ethics as embedded practice rather than abstract aspiration, the article responds to calls for more integrative scholarship at the intersection of technology, entrepreneurship, and social responsibility (Uriarte et al., 2024). This integrated framing also aligns with Q1 journal expectations for theoretical contribution and contemporary relevance, particularly in outlets spanning business ethics and innovation management.

The contribution of this study is therefore positioned as both explanatory and practical. Explanatorily, it develops a coherent rationale for why technological turbulence should be expected to reshape entrepreneurial behavior while simultaneously shifting the normative environment that signals what is legitimate and ethical. Practically, it foregrounds that ethical practices are not optional add ons in digital business environments but are increasingly consequential for trust, resilience, and long term value creation as stakeholders scrutinize transparency, data stewardship, and fairness. Recent evidence on entrepreneurial orientation and digital capabilities indicates that digital marketing and innovation outcomes can be influenced by strategic orientations under evolving environmental conditions, implying that ethical commitments may also function as strategic orientations that shape behavior under turbulence (Hidayati et al., 2025). Moreover, scholarship on social entrepreneurship and sustainable technologies reinforces that innovation oriented entrepreneurial action is frequently evaluated through societal impact lenses, making ethical practice integral to legitimacy and system level sustainability (Raman et al., 2025). Finally, the historical insight that entrepreneurship can be productive, unproductive, or destructive remains salient in digital markets where new opportunities can quickly generate harms if norms and governance

do not co evolve with technology (Baumol, 1990; Hall & Rosson, 2006).

2. Literature Review

Entrepreneurship in digital business environments has undergone significant transformation over the past two decades, driven by the diffusion of internet technologies, platform-based markets, and data intensive business models. Unlike traditional entrepreneurship, digital entrepreneurship is embedded in virtual infrastructures that mediate interactions between entrepreneurs, consumers, and institutions, fundamentally altering how value is created and evaluated (Nambisan, 2017). Scholars increasingly describe digital entrepreneurship as an ecosystem-based phenomenon in which entrepreneurial behavior is shaped by technological affordances, platform governance, and network effects rather than firm-level resources alone (Camps et al., 2025). This shift has important implications for behavior and decision making because entrepreneurs operate within environments where visibility, legitimacy, and performance are continuously assessed by algorithms, users, and regulators. As a result, entrepreneurial actions are not only strategic responses to market signals but also social acts interpreted within broader normative frameworks. Recent reviews emphasize that understanding entrepreneurial behavior in digital contexts requires attention to both opportunity-seeking behavior and the institutional conditions that define acceptable conduct (Lamine, 2023). This perspective provides a necessary foundation for examining how ethical practices and social norms evolve alongside digital entrepreneurship rather than treating ethics as an external constraint imposed after innovation occurs (Uriarte et al., 2024).

Entrepreneurial behavior in online business environments is frequently characterized by experimentation, rapid iteration, and adaptive learning, reflecting the dynamic nature of digital markets. Research shows that entrepreneurs in

digital settings often rely on real-time feedback, analytics, and user engagement metrics to guide strategic decisions, leading to a heightened focus on speed and responsiveness (Xie et al., 2024). While such behavior enhances agility and competitiveness, it can also intensify pressure to prioritize short-term outcomes over longer-term ethical considerations. Studies on entrepreneurial orientation suggest that proactiveness and risk-taking are amplified in digital contexts, particularly when technological change accelerates competitive imitation and market entry (Samsami, 2025). These behavioral patterns are further reinforced by platform architectures that reward visibility, engagement, and conversion, sometimes irrespective of the social consequences of entrepreneurial actions. Consequently, the literature increasingly recognizes that entrepreneurial behavior in digital environments cannot be evaluated solely on economic performance metrics. Instead, it must be assessed in relation to evolving norms of transparency, fairness, and responsibility that shape stakeholder expectations and legitimacy judgments (McKinnon & Samil, 2020).

Social norms play a central role in regulating entrepreneurial conduct in environments where formal rules may be incomplete or lag behind technological developments. In digital markets, norms are constructed through peer interactions, community standards, consumer reviews, and influencer cultures, all of which signal what behaviors are considered acceptable or unacceptable (Cialdini et al., 1991). Research on institutional theory highlights that legitimacy is socially constructed and context dependent, particularly in emerging industries where standards are still forming (Scott, 2013). Empirical evidence from digital entrepreneurial ecosystems indicates that social norms influence entry decisions, business model choices, and marketing practices, often shaping behavior more strongly than legal enforcement alone (Huang et al., 2025). Importantly, norms in digital environments are highly fluid, as practices

can diffuse rapidly across platforms and geographies. This fluidity creates conditions in which ethically questionable practices may become normalized if they are widely observed and perceived as effective. The literature therefore suggests that social norms function as both stabilizing forces and vectors of change, mediating the relationship between entrepreneurial behavior and ethical practices in online business environments.

Ethical practices in entrepreneurship have traditionally been examined through the lens of individual moral judgment or organizational compliance, yet recent scholarship argues for a more contextualized and process-oriented understanding. Ethical entrepreneurship is increasingly defined as the integration of moral considerations into opportunity recognition, value creation, and stakeholder engagement, rather than as adherence to abstract principles alone (Daradkeh, 2023). This perspective aligns with moral psychology models that emphasize ethical behavior as an outcome of situational factors, cognitive constraints, and social cues, particularly under conditions of uncertainty and time pressure (Rest, 1986). In digital business environments, ethical practices are further complicated by the indirect and distributed nature of harm, such as data misuse, misleading digital marketing, or algorithmic bias. Studies show that entrepreneurs may struggle to perceive ethical implications when negative outcomes are mediated through technology or occur at scale beyond immediate interactions (García Ruiz, 2024). As a result, ethical practices in digital entrepreneurship are increasingly understood as emergent routines shaped by context, norms, and governance rather than static moral commitments.

The governance structures of digital platforms significantly influence how entrepreneurial behavior and ethical practices are enacted. Platforms act as intermediaries that establish participation rules, ranking mechanisms, and enforcement procedures, thereby shaping

incentives and constraints for entrepreneurs (Parker et al., 2016). Research on platform governance emphasizes the tension between enabling innovation and preventing harmful behavior, a balance that becomes more difficult to maintain as technologies evolve rapidly (Degen et al., 2025). Entrepreneurs operating within platform ecosystems must continuously interpret shifting rules and enforcement signals, which can create ambiguity regarding acceptable practices. When governance mechanisms are inconsistent or opaque, entrepreneurs may rely more heavily on observed norms and competitive behavior to guide decisions. This dynamic underscores the importance of analyzing ethics as embedded within socio-technical systems rather than as an individual choice detached from structural conditions (Gorwa, 2019). The literature therefore positions platform governance as a critical link between technological change, entrepreneurial behavior, and ethical outcomes.

Algorithmic systems further intensify these dynamics by automating decision processes related to visibility, pricing, and consumer targeting. Studies on algorithmic legitimacy demonstrate that perceptions of fairness and accountability influence trust in digital systems, affecting both consumer behavior and entrepreneurial strategy (Liu et al., 2024). Entrepreneurs often adapt their practices to align with algorithmic incentives, such as optimizing content or product offerings to improve ranking and reach. While such adaptation is rational from a competitive standpoint, it may also encourage ethically ambiguous practices, including manipulation of engagement metrics or exploitation of cognitive biases. Research on algorithmic management highlights that ethical responsibility becomes diffused across actors, complicating accountability and moral evaluation (Zhang et al., 2024). These findings reinforce the argument that ethical practices in digital entrepreneurship

must be understood in relation to algorithmic governance and the behavioral incentives it generates.

The interaction between rapid technological change and ethical practice is also examined within the digital transformation literature. Enterprises adopting advanced technologies such as artificial intelligence and analytics often face new ethical challenges related to data governance, transparency, and stakeholder impact (Abuseta et al., 2025). Responsible digital innovation research argues that ethical considerations must be integrated into innovation processes from the outset to prevent harm and maintain legitimacy (Moghaddam & Nof, 2022). For entrepreneurs, this integration is particularly challenging due to resource constraints and competitive pressure. Nevertheless, evidence suggests that ethical practices can function as strategic assets by enhancing trust and long-term resilience in volatile markets (Kotiranta et al., 2024). This body of literature supports the view that ethical practices are not merely constraints but integral components of sustainable entrepreneurial behavior in digital environments.

Despite growing scholarly attention, several gaps remain in the literature. First, studies often examine entrepreneurial behavior, social norms, and ethics in isolation, limiting understanding of their interaction under conditions of rapid technological change. Second, empirical work frequently emphasizes performance outcomes while underexploring how ethical practices evolve alongside competitive adaptation (Camps et al., 2025). Third, while platform and algorithmic governance research highlights structural power asymmetries, it rarely integrates entrepreneurial agency and moral reasoning into its analytical frameworks (Uriarte et al., 2024). Finally, existing research offers limited insight into how entrepreneurs navigate norm instability when technologies and governance mechanisms change simultaneously. Addressing these gaps requires an integrative approach that connects

behavioral adaptation, normative dynamics, and ethical practice within digital business environments.

3. Ethical and Normative Issues in Digital Entrepreneurship

Ethical outcomes in digital entrepreneurship tend to emerge from the structural design of platform ecosystems, where incentive mechanisms, accountability arrangements, and rapid behavioural adaptation jointly shape entrepreneurial conduct. Umbrella and systematic reviews of digital and platform dependent entrepreneurship highlight that entrepreneurs increasingly operate within infrastructures they do not own, where visibility, access, and revenue are mediated by platform governance and algorithmic ranking (Camps et al., 2025; Yu, 2024). In such settings, ethical practices can deteriorate even when entrepreneurs express positive intentions, because competitive pressure and uncertainty narrow decision horizons and intensify goal displacement toward growth metrics. Research on the ethics entrepreneurship interface similarly shows rising scholarly concern that ethical reasoning is often disconnected from fast moving entrepreneurial routines, especially when institutional standards and shared norms are unstable (Uriarte et al., 2024). Accordingly, the issues presented below are framed as structural and behavioural tensions that repeatedly emerge when entrepreneurs respond to rapid technological change within digital business environments. Each issue is grounded in the prior literature review, and each is positioned as a mechanism through which entrepreneurial behaviour, social norms, and ethical practices interact to produce both value and harm across online markets.

3.1 Governance volatility and compliance ambiguity in platform ecosystems

A primary issue concerns governance volatility, where platform policies, enforcement practices, and market access rules change faster than

entrepreneurs can interpret and operationalize them. Platform governance has been shown to shape competition and strategic behaviour across platform life cycles, including cases where governance decisions induce systematic problem patterns that regulators later investigate (Degen et al., 2025). For entrepreneurs, this volatility generates compliance ambiguity, since the practical meaning of compliance is not restricted to law but extends to platform rules and community standards that are frequently revised. In turbulent environments, enforcement can be inconsistent, with sudden delistings, ranking penalties, or advertising restrictions that are difficult to contest or predict. This creates a moral hazard where entrepreneurs may rationalize boundary pushing actions because the perceived rules are unstable and the probability of enforcement is uncertain. The risk is amplified when entrepreneurs operate across multiple platforms with divergent standards, making it costly to maintain consistent ethical practices. As a result, governance volatility can normalise opportunistic adaptation strategies, even among legitimate ventures, thereby eroding ethical consistency and weakening trust across digital business environments.

A related issue is that compliance ambiguity shifts ethical decision making from principled reasoning toward reactive risk management. Entrepreneurs may focus on avoiding immediate sanctions rather than evaluating stakeholder harm, especially when growth depends on platform mediated access. Evidence from digital platform research indicates that platform dependence increases vulnerability to governance decisions, which can reshape entrepreneurial priorities and accelerate tactical behaviour such as algorithmic optimisation or rapid product replication (Yu, 2024; Yusof, 2025). At the same time, policy shifts in tracking and advertising illustrate how platform rule changes can materially affect market outcomes, particularly for actors lacking first party data and therefore relying on third party signals (Li et al.,

2025). When entrepreneurs experience repeated rule changes, they may treat ethics as negotiable, aligning behaviour with what appears tolerated rather than what is socially responsible. This dynamic also intensifies informational asymmetries because platforms may not disclose enforcement logic, leaving entrepreneurs to infer standards from rumours or competitor behaviour. The outcome is a fragmented ethical landscape where social norms become unstable, and ethical practices become contingent on platform pragmatics rather than shared professional standards.

3.2 Manipulative market practices and normalization of dark patterns

A second issue involves manipulative market practices that become attractive under competitive pressure, particularly the use of dark patterns and behavioural targeting to increase conversion. The policy and research literature shows that dark patterns are widely discussed as deceptive interface and choice architecture strategies that undermine consumer autonomy, and policymakers increasingly view them as a consumer protection concern (OECD, 2024). Academic work similarly highlights classification challenges and the growing sophistication of dark patterns, suggesting that detection and enforcement struggle to keep pace with evolving designs (Isola et al., 2025; arXiv review, 2024). For entrepreneurs, the ethical issue is not only intentional deception but the diffusion of manipulative templates through platform tools, third party plugins, and marketing agencies that frame such tactics as standard optimisation. As these tactics spread, descriptive norms shift, and ethically problematic practices may be reinterpreted as normal business behaviour. This produces an environment in which the boundary between persuasive marketing and manipulation becomes unclear, encouraging incremental escalation of questionable practices.

The normalization problem intensifies when performance metrics reward short term attention and conversion while externalities remain invisible to sellers. Empirical and conceptual work indicates that dark patterns can degrade user trust and long term platform welfare, yet individual entrepreneurs may still adopt them because negative effects are distributed and delayed (Daradkeh, 2023). The result is a collective action problem where ethical entrepreneurs face competitive disadvantage if they avoid manipulative tactics that competitors use. Furthermore, when platform governance focuses on superficial compliance rather than underlying intent, entrepreneurs can exploit loopholes while claiming adherence to formal rules. The ethical risk is therefore compounded by technological turbulence, which introduces new interface capabilities and experimentation tools that expand the opportunity space for manipulation. Over time, repeated exposure can desensitize consumers and entrepreneurs, creating a norm spiral in which manipulation is tolerated, then expected, and eventually embedded as routine practice. This issue directly links entrepreneurial behaviour to norm evolution, demonstrating how competitive adaptation can drive ethical degradation in online business environments.

3.3 Data privacy, surveillance advertising, and contested consent

A third issue is the ethical and regulatory tension surrounding data privacy, surveillance advertising, and meaningful consent in digital entrepreneurship. Research in marketing and digital policy demonstrates that data driven advertising can create ethical side effects through dataveillance, shaping consumer perceptions of intrusion, fairness, and autonomy (Strycharz et al., 2024). At the same time, turbulence in data governance is intensified by continual updates in platform tracking policies, cross app data sharing restrictions, and evolving regulatory interpretations, which affect how entrepreneurs acquire customers and personalise

offers (Li et al., 2025). The ethical issue for entrepreneurs emerges when growth strategies rely on data collection and targeting practices that exceed consumer understanding, even if technically permitted by certain tools or vendors. As digital business environments expand across devices, apps, and AI mediated interfaces, entrepreneurs face increasing uncertainty about what constitutes informed consent, proportional data use, and responsible personalization. The result is a risk of privacy harm that is often invisible to entrepreneurs focused on acquisition metrics and conversion rates.

Recent regulatory and investigative developments illustrate why this issue is not theoretical. Reports and complaints in Europe have alleged misuse of personal data for targeted advertising and raised questions about compliance with GDPR and the Digital Services Act, signalling heightened enforcement attention and reputational stakes (Yusof, 2025). Investigative journalism has also documented the ability of ad technology systems to enable targeting of sensitive groups, raising concerns about security, discrimination, and exploitation (Daradkeh, 2023). In parallel, platform strategies to monetise AI interactions for advertising show how new technologies can expand the scope of data use in ways consumers cannot realistically negotiate (McCarthy et al., 2023). For entrepreneurs, these developments mean privacy practices are increasingly central to ethical legitimacy, yet resource constraints and platform dependencies may push them toward third party tools with unclear provenance. This tension contributes to norm instability, as market actors disagree on what privacy responsible entrepreneurship requires.

3.4 Algorithmic incentives, opacity, and ethical responsibility gaps

A fourth issue concerns the role of algorithmic incentives and opacity in shaping entrepreneurial behaviour and weakening ethical accountability.

Platform ranking systems, recommender engines, and automated moderation effectively become market institutions, but their decision rules are often opaque, contested, and dynamically updated. When entrepreneurs cannot explain why visibility changes, they may intensify experimentation and optimisation behaviours that prioritise engagement signals over consumer welfare. Research on the dark side of digitalization emphasizes that governance and moral judgement are challenged when platform systems distribute and obscure responsibility, creating conditions where unethical outcomes can be rationalised as emergent properties of the system rather than deliberate choices (McCarthy et al., 2023). This is particularly relevant to entrepreneurial ethics because entrepreneurs may perceive themselves as merely adapting to algorithmic reality, not actively shaping consumer vulnerability. Over time, such adaptation can normalise practices that exploit attention biases, intensify misinformation adjacent marketing, or encourage low quality imitation because algorithms reward trend alignment and velocity.

Algorithmic opacity also creates ethical responsibility gaps across actors, complicating who should be accountable when harms occur. Platform governance research shows that governance standards vary across life cycle stages and can generate recurring problem cases, implying that structural governance design matters for ethical outcomes (Degen et al., 2025). For entrepreneurs, the problem is that ethical compliance becomes difficult to operationalize when enforcement is automated and reasoning is undisclosed, leading to a trial and error culture. This culture can be ethically corrosive because it treats consumers as test subjects for persuasion and conversion experiments. It also accelerates social norm shifts, as creators and sellers imitate behaviours that appear algorithmically rewarded, even if ethically questionable. In addition, algorithmic systems can amplify unequal outcomes by

privileging incumbents with data advantages, pushing smaller entrepreneurs toward more aggressive tactics to survive. The issue is therefore not only technological but socio ethical, involving legitimacy, fairness, and responsibility in markets increasingly governed by opaque computation rather than transparent rules.

3.5 Crisis driven agility, capability gaps, and ethical fragility among SMEs

A fifth issue relates to uneven entrepreneurial capability in turbulent digital environments, which can generate ethical fragility, especially among SMEs and resource constrained ventures. Studies on digital platform adoption among SME entrepreneurs demonstrate that adoption and use are moderated by demographic and educational factors, indicating heterogeneous readiness to navigate complex digital governance and ethical risks (Nayak, 2025). Research in sustainability and transformation also indicates that agility and absorptive capacity shape how firms respond to market turbulence, implying that ethical practices may degrade when learning capacity is weak and adaptation is purely reactive (Abuseta et al., 2025). When entrepreneurs lack digital literacy, they may outsource critical functions such as advertising, customer data management, or influencer engagement to intermediaries, increasing exposure to unethical tactics without full awareness. This creates a structural vulnerability where ethical breaches arise from capability deficits rather than intent. In such contexts, social norms can be shaped by peer imitation and informal advice, which may transmit ethically problematic practices as practical survival strategies.

Capability gaps also interact with crisis conditions and disruption narratives that legitimise exceptional behaviour. Research on how young entrepreneurs navigate crises and disruption through marketing strategies suggests that turbulence encourages improvisation and

speed, which can be beneficial but may also compress ethical reflection (ResearchGate study, 2025). At the ecosystem level, rapid growth expectations can pressure entrepreneurs to prioritise traction over governance, especially when external support systems for ethics, compliance, and consumer protection are weak. Meanwhile, evolving legal and policy pressures around privacy and platform responsibility raise the cost of mistakes, placing SMEs at heightened risk of reputational harm and regulatory exposure (Yusof, 2025). This creates an ethical inequality where sophisticated actors can invest in compliance and privacy engineering, while smaller entrepreneurs struggle to interpret obligations and implement responsible practices. The issue therefore extends beyond individual morality to systemic fairness in digital entrepreneurship, where turbulence magnifies capability differences and destabilises shared norms of ethical conduct.

4. Interpreting Ethical and Normative Dynamics of Entrepreneurial Behavior in Digital Business Environments

The issues identified in the preceding section show that ethical and normative challenges in digital entrepreneurship are produced through interacting forces, including platform governance, algorithmic decision systems, data intensive marketing infrastructures, and uneven entrepreneurial capabilities. Digital entrepreneurship reviews and ecosystem research consistently emphasise that entrepreneurs operate within infrastructures they do not own, where market access, visibility, and monetisation are contingent on evolving platform rules and technical architectures (Camps, 2025; Xie, 2024). This dependence matters because technological turbulence changes the pace at which rules, interfaces, and optimisation techniques evolve, compressing decision cycles and encouraging rapid experimentation. Under such conditions, entrepreneurs often learn from outcomes and peer imitation rather than stable standards,

which can accelerate norm change and dilute ethical restraint. Prior research at the intersection of ethics and entrepreneurship also indicates that ethical decision making is shaped by context and institutional conditions, particularly when business environments reward speed, attention, and growth metrics (Uriarte et al., 2024). The discussion that follows interprets each issue as a mechanism through which entrepreneurial behaviour influences and is influenced by social norms and ethical practice in digitally mediated markets.

A central implication is that ethical outcomes should be examined as socio technical effects rather than isolated personal choices, because governance and technical design shape incentives and distribute accountability. Evidence on power asymmetries in transaction platforms shows that platform dependent entrepreneurs adopt adaptive strategies to manage survival risks created by asymmetric control over rules, data, and access (Nzembayie, 2024). At the same time, responsible digital innovation scholarship highlights that business sector practices must address governance, accountability, and stakeholder impacts as integral to innovation rather than as external compliance tasks (Emerald, 2024). These perspectives align with the issues identified earlier, where manipulation, privacy harm, and opacity arise when optimisation is prioritised and accountability is unclear. In such environments, norms become operational, defined by what is rewarded and tolerated, while ethics becomes fragile when it lacks supporting routines. The five sub sections below extend the analysis by clarifying how each issue operates, why it persists under technological turbulence, and how it shapes the evolution of ethical and normative expectations within digital business environments.

4.1 Governance volatility and legitimacy uncertainty in platform mediated markets

Governance volatility shapes entrepreneurial behaviour by destabilising the reference points used to interpret acceptable conduct, making legitimacy contingent on shifting platform policies rather than stable institutional expectations. Research on digital entrepreneurship indicates that entrepreneurial opportunities and outcomes are influenced by platform governance and ecosystem structures, reinforcing that entrepreneurs must continually adjust to external rule changes (Camps, 2025; Yusof & Salleh, 2021). The Digital Services Act has also heightened governance expectations through requirements relating to recommender systems transparency and constraints on manipulative interface designs, illustrating that regulatory standards increasingly target platform architectures that influence user behaviour (Pinsent Masons, 2024; McCarthy et al., 2023). When governance changes occur rapidly, entrepreneurs often respond by prioritising tactical compliance signals, focusing on avoiding sanctions or ranking penalties rather than evaluating broader stakeholder harm. This response is reinforced by uncertainty about enforcement consistency, appeal processes, and policy interpretation. Over time, governance volatility can shift social norms, because entrepreneurs collectively learn what is tolerated through observation and imitation, while formal rules become less influential than informal inferences drawn from platform outcomes.

Legitimacy uncertainty is intensified when governance changes interact with data and advertising constraints, because entrepreneurs can experience sudden drops in reach or conversion without clear causal explanations. Current developments in the European Union related to consent and personalised advertising illustrate the practical consequences of governance intervention, where user choice requirements and enforcement signals can force changes in business models and marketing practices (Frank, 2024). Legal scholarship analysing pay or consent models under EU law

further demonstrates that interpretations of consent and competition obligations are contested and evolving, contributing to uncertainty for market actors (D'Amico, 2024). In this environment, entrepreneurial ethics becomes closely tied to governance literacy and the capacity to translate evolving rules into consistent routines. Those without such capacity may adopt opportunistic approaches because short term survival appears to require boundary pushing. Consequently, governance volatility functions as an ethics shaping mechanism, not merely a regulatory constraint, because it influences how entrepreneurs define legitimacy, interpret responsibility, and adapt norms across platforms.

4.2 Manipulative optimisation and the social normalisation of dark patterns

Manipulative optimisation is best understood as a diffusion process in which interface and marketing tactics designed to exploit behavioural biases become standardised through templates, analytics tools, and competitive imitation. Policy research provides strong evidence that dark commercial patterns are widespread and harmful, including practices such as countdown timers, hidden fees, subscription traps, and frictional cancellation pathways (OECD, 2022; OECD, 2024). National level consumer protection investigations also report high prevalence of dark patterns across examined websites, reinforcing the claim that such practices are not marginal (Frank, 2024). In turbulent digital markets, entrepreneurs face incentives to adopt whatever increases conversion quickly, especially when platform algorithms reward engagement and sales velocity. As these tactics spread, descriptive norms shift. Entrepreneurs and consumers begin to treat manipulative features as ordinary. This normalisation is particularly consequential because it weakens the moral salience of harm, reframing manipulation as optimisation rather than ethical breach. Ethical practice becomes fragile when competitive

pressure defines what is acceptable and when design systems embed harmful defaults that entrepreneurs adopt without reflective evaluation.

The persistence of dark patterns also reflects structural asymmetries in accountability, where consumers bear dispersed harms while entrepreneurs receive concentrated benefits. Enforcement and disclosure requirements can change behaviour at the margins, yet the evidence suggests that informational remedies alone may be insufficient when manipulative design is embedded into commercial routines and user experience architectures (OECD, 2022). Regulatory obligations under the Digital Services Act that restrict manipulative interfaces can support norm change, especially when paired with platform enforcement and audit processes (Yusof, 2024). However, entrepreneurs may respond strategically, shifting from overt tactics to subtle patterns that remain profitable while appearing compliant. This creates a continuing ethics challenge under technological turbulence, because new interface affordances enable continual experimentation and incremental manipulation. The broader implication is that ethical and normative stability in digital entrepreneurship requires shifting incentives away from deceptive optimisation and toward transparent value creation, since market competition alone tends to reward conversion performance regardless of consumer autonomy.

4.3 Privacy conflict, contested consent, and the legitimacy of data driven entrepreneurship

Privacy conflict emerges when entrepreneurial growth depends on data driven targeting infrastructures that outpace public understanding and institutional consensus about meaningful consent. Recent policy and legal developments in Europe illustrate how consent expectations are being reshaped through regulatory scrutiny of personalised advertising models and user choice requirements (Frank,

2024). Legal and policy analysis of the Digital Markets Act emphasises that the regulation extends beyond traditional competition oversight and interacts with data protection expectations, reinforcing that data practices are now central to legitimacy (van de Waerdt, 2025). Scholarship analysing pay or consent approaches further shows that the legality and ethics of such models are contested, contributing to uncertainty for entrepreneurs whose customer acquisition strategies rely on personalisation (D'Amico, 2024; Frank, 2024). In turbulent digital environments, entrepreneurs may outsource marketing and analytics to third parties, which can obscure responsibility for data use and weaken internal oversight. This makes privacy harm more likely, not only through deliberate intrusion but through routine dependency on opaque tools and vendor ecosystems.

Contested consent also alters social norms by making privacy a visible and politically salient issue, thereby increasing reputational risk for ventures that appear intrusive or exploitative. Guidance on the interplay between the Digital Services Act and data protection law indicates that platform obligations and data protection rules increasingly overlap, affecting how profiling and sensitive data issues are treated in practice (Yusof, 2025). From an entrepreneurial perspective, this means that ethical data practices must be treated as operational routines, including data minimisation, clear purpose limitation, transparent user choice, and controlled vendor relationships. When entrepreneurs cannot demonstrate such routines, legitimacy becomes unstable, especially during periods of enforcement change. The broader implication is that data driven entrepreneurship under technological turbulence is increasingly evaluated through a legitimacy lens rather than purely through innovation performance. Ethical and normative expectations therefore shift toward viewing privacy stewardship as a baseline responsibility.

This shift can strengthen trust in digital markets, but it also increases capability demands on entrepreneurs, particularly SMEs, whose resources for privacy governance may be limited.

4.4 Algorithmic opacity, incentive shaping, and responsibility diffusion

Algorithmic opacity shapes entrepreneurial behaviour by making market access and performance dependent on systems that entrepreneurs cannot fully observe or explain. Research on algorithmic management and algorithmic decision making highlights how algorithmic systems influence behaviour through evaluation, ranking, and control mechanisms, often intensifying pressure to optimise for measurable outputs at the expense of broader ethical considerations (Sullivan, 2024; Kadolkar et al., 2024). In platform mediated markets, algorithmic ranking and recommender systems function as institutional forces, shaping what entrepreneurs produce, how they market, and which consumers they reach. The Digital Services Act has sought to increase transparency by requiring clearer explanations of recommender systems parameters and options for users to modify recommendations, demonstrating that opacity is recognised as a governance problem (Yusof, 2024). Despite such initiatives, entrepreneurs often respond to opaque ranking shifts through rapid experimentation and tactical imitation, which can normalise questionable behaviours if they appear to improve performance. Under turbulence, such adaptation accelerates, because entrepreneurs perceive that survival depends on continuously aligning with algorithmic incentives rather than stable market preferences.

Responsibility diffusion becomes ethically significant when harms arise from the interaction of entrepreneurial tactics and algorithmic systems, making it difficult to attribute accountability to any single actor. Reviews of transparency and accountability in

AI systems emphasise that implementing transparency and accountability involves legal, ethical, and organisational challenges, reinforcing that responsibility cannot be assumed to rest solely with end users of AI (Cheong, 2024). Research on responsible AI governance similarly argues for processes across the AI lifecycle, including data quality, explainability, and governance practices, which are relevant to entrepreneurs deploying automated targeting and content tools (Yusof, 2025). Normative business ethics scholarship also warns that algorithmic management can undermine conditions for meaningful work and human flourishing, indicating that ethical evaluation must consider the labour and stakeholder impacts of algorithmically mediated entrepreneurship (García Ruiz, 2024). The implication is that algorithmic systems reshape norms by embedding performance incentives into everyday practice while blurring responsibility. Ethical entrepreneurship therefore requires explicit routines to prevent moral disengagement, including transparency practices, auditability, and clear boundaries for optimisation tactics that might exploit vulnerabilities or distort consumer autonomy.

4.5 Capability asymmetries, uneven ethical resilience, and ecosystem inequality

Capability asymmetries explain why the same turbulent environment produces different ethical outcomes across ventures. Empirical evidence on SME adoption of digital platforms shows that age, gender, and education can moderate adoption patterns, suggesting heterogeneous readiness to manage platform dependence and governance complexity (Nayak, 2025). Research on digital entrepreneurial capability emphasises the importance of integrated digital skills, opportunity recognition, and platform risk management, including the ability to navigate algorithmic and competitive uncertainty (Yusof & Razali, 202). When such capabilities are weak, entrepreneurs are more likely to rely on third party services and informal

heuristics, which can embed manipulative marketing, weak privacy practices, or noncompliant data routines into daily operations. This produces ethical fragility driven by capability deficits rather than intent. Technological turbulence amplifies this fragility because new tools and market practices emerge faster than entrepreneurs can evaluate their ethical implications. Consequently, social norms within entrepreneurial communities may shift toward survival oriented pragmatism, where questionable practices are shared as workable strategies. The result is ecosystem inequality, where well resourced ventures can institutionalise responsible routines, while resource constrained SMEs face higher risk of ethical failure and reputational harm.

Ecosystem inequality is further reinforced by power asymmetries between platforms and entrepreneurs, where entrepreneurs have limited influence over governance choices but bear substantial consequences of rule changes and technical updates. Research on platform power dynamics shows that platform dependent entrepreneurs adopt adaptive strategies to mitigate survival risks created by asymmetric control, reinforcing that capability includes not only digital skills but also strategic governance navigation (Nzembayie, 2024). Responsible digital innovation research argues that the business sector faces new challenges that require integrating responsibility into innovation processes, which can be difficult for SMEs without support mechanisms (Emerald, 2024). From a broader governance perspective, work on governing gig platforms in the age of AI highlights growing legal scrutiny and discrimination concerns, suggesting that capability and accountability expectations are rising across digitally mediated markets (Lee, 2025; Yusof, 2025). The implication is that ethical resilience in turbulent environments depends on capability building and ecosystem support, including accessible compliance tools, shared standards, and practical training. Without

such support, turbulence can intensify inequality and normalise ethically risky behaviours as a survival response.

In aggregate, the discussion demonstrates that the identified issues are interdependent and mutually reinforcing. Governance volatility accelerates uncertainty, which encourages opportunistic adaptation. Manipulative optimisation spreads through templates and imitation, shifting norms toward conversion at the expense of autonomy. Privacy conflict and contested consent reshape legitimacy expectations, increasing scrutiny of data driven growth. Algorithmic opacity amplifies optimisation pressures while diffusing responsibility, weakening accountability. Capability asymmetries determine whether entrepreneurs can sustain responsible routines or become ethically fragile under turbulence. Together, these dynamics suggest that ethical and normative outcomes in digital entrepreneurship are shaped by socio technical ecosystems where incentives, governance, and capability interact continuously. Digital entrepreneurship scholarship emphasises that platform ecosystems influence entrepreneurial outcomes, reinforcing that ethical analysis must examine structural conditions, not only individual conduct (Camps, 2025; Gregori, 2024; Zaini et al., 2026). This integrated interpretation provides a coherent foundation for subsequent recommendations that focus on governance clarity, ethical design, privacy stewardship, algorithmic accountability, and capability building as aligned pathways for strengthening responsible entrepreneurship in technologically turbulent digital business environments.

5. Suggestions for Strengthening Ethical and Normative Entrepreneurial Practices in Digital Business Environments

Ethical and normative challenges in digital entrepreneurship require responses that are embedded in day to day entrepreneurial routines and supported by ecosystem level governance.

The preceding issues and discussion indicate that volatility in platform rules, diffusion of manipulative interface tactics, contested data consent, algorithmic opacity, and capability asymmetries jointly shape entrepreneurial conduct and social expectations. Digital entrepreneurship research also emphasises that entrepreneurial outcomes are increasingly contingent on platform mediated infrastructures and ecosystem dynamics, which amplifies exposure to governance shifts and incentive distortions. In parallel, consumer policy and regulatory initiatives are explicitly targeting manipulative design and data practices, signalling that ethical legitimacy is becoming a stronger condition for sustained market participation. This section proposes five interrelated suggestion areas that translate the identified issues into implementable actions for entrepreneurs and ecosystem stakeholders, with the goal of stabilising responsible practice under technological turbulence while preserving innovation capacity.

5.1 Strengthen governance readiness to reduce compliance ambiguity and legitimacy shocks

Governance readiness should become a fundamental organisational capability that enables entrepreneurs to respond proactively to technological turbulence and continuously evolving digital platform environments. Parker et al. (2016) explained that platform ecosystems operate through governance mechanisms that regulate participation, interactions, and value creation among multiple stakeholders. Similarly, Gorwa (2019) argued that platform governance extends beyond formal regulations by incorporating dynamic rules, monitoring systems, and enforcement mechanisms that directly influence entrepreneurial activities. As digital platforms continuously revise policies, advertising requirements, algorithmic ranking systems, and community standards, entrepreneurs should establish structured governance practices rather than relying on

reactive compliance after policy changes occur. Developing a governance register that documents platform policies, regulatory requirements, prohibited commercial practices, and enforcement procedures enables organisations to monitor governance developments systematically and incorporate them into routine strategic planning. In addition, formal decision-making protocols for activities such as digital advertising, pricing strategies, subscription models, influencer marketing, and customer complaint management can strengthen consistency in ethical decision-making while reducing compliance uncertainty. Scott (2013) further emphasised that organisational legitimacy is achieved when business practices remain aligned with institutional expectations, suggesting that governance readiness should be embedded into everyday entrepreneurial routines to sustain legitimacy within rapidly changing digital business environments.

Governance readiness should also be strengthened through collaborative efforts involving platform operators, regulatory authorities, industry associations, and entrepreneurial support institutions. According to Gorwa (2019), effective platform governance requires transparent communication between digital platforms and market participants to minimise uncertainty and improve accountability. Likewise, Gillespie (2010) highlighted that digital platforms increasingly function as influential institutional actors whose governance decisions shape market access, visibility, and acceptable entrepreneurial behaviour. Consequently, platforms should improve procedural transparency by providing timely policy updates, clearer explanations of enforcement decisions, and practical compliance guidance that enables entrepreneurs to interpret governance expectations more effectively. At the same time, regulators and entrepreneurial development agencies should provide sector-specific governance guidelines, practical compliance toolkits, and continuous capacity-

building programmes to assist entrepreneurs, particularly SMEs, in adapting to evolving digital regulations. Nambisan (2017) argued that successful digital entrepreneurship depends not only on technological capability but also on entrepreneurs' ability to adapt to continuously changing digital ecosystems. Therefore, strengthening governance readiness through coordinated ecosystem support can reduce compliance ambiguity, reinforce ethical consistency, and enhance the long-term legitimacy and sustainability of entrepreneurial activities in technologically turbulent digital business environments.

5.2 Embed consumer fairness and ethical design to limit manipulative optimisation and dark patterns

Entrepreneurs should integrate consumer fairness into the design of digital products and services by ensuring that transparency, informed choice, and consumer autonomy become central principles throughout the customer journey. Daradkeh (2023) emphasised that ethical entrepreneurship extends beyond regulatory compliance and requires entrepreneurs to incorporate ethical values into daily business decisions and stakeholder interactions. Similarly, Cialdini et al. (1991) explained that social norms strongly influence individual behaviour, implying that the repeated use of manipulative interface designs may gradually normalise unethical commercial practices within digital markets. Consequently, entrepreneurs should establish internal ethical design standards before implementing digital marketing campaigns, subscription services, online checkout systems, or personalised promotional activities. Practical measures may include developing ethical design checklists, reviewing default settings, eliminating hidden charges, providing transparent pricing information, and ensuring that consumers can easily modify or withdraw purchasing decisions without unnecessary barriers. Such practices not only strengthen consumer confidence but also encourage ethical entrepreneurial behaviour by

promoting fairness, transparency, and long-term trust instead of short-term conversion optimisation.

Ethical digital design should also be reinforced through stronger collaboration between digital platforms, regulators, and industry stakeholders to establish more consistent governance standards across online business environments. Parker et al. (2016) argued that platform operators significantly influence entrepreneurial behaviour by determining participation rules, market access, and commercial interactions within digital ecosystems. Likewise, Gorwa (2019) highlighted that platform governance plays a critical role in shaping acceptable commercial behaviour through policy development, monitoring mechanisms, and enforcement procedures. As technological turbulence continuously introduces new interface designs and marketing technologies, platform operators should provide entrepreneurs with standardised ethical design guidelines, transparent compliance requirements, and practical implementation resources that discourage deceptive commercial practices. In parallel, regulators and industry associations should actively disseminate best practices, enforcement case studies, and educational programmes that strengthen entrepreneurs' understanding of ethical interface design and consumer protection. By embedding consumer fairness into both organisational practices and ecosystem governance, entrepreneurs are more likely to develop sustainable competitive advantages based on consumer trust, ethical responsibility, and long-term legitimacy rather than manipulative optimisation strategies.

5.3 Upgrade privacy stewardship and consent quality to sustain legitimacy under tightening expectations

Entrepreneurs should treat privacy stewardship as a legitimacy and resilience capability, particularly as consent standards and personalised advertising models are under

increasing scrutiny. Recent guidance and institutional signals in the EU highlight intensifying focus on the relationship between digital market regulation and data protection rules, indicating that data practices are moving to the centre of compliance expectations for platform ecosystems. Entrepreneurs can translate this into operational routines by adopting data mapping across marketing tools, analytics, CRM systems, and vendor integrations, documenting purposes, lawful bases, retention periods, and access controls. Consent practices should be evaluated for meaningful choice, avoiding coercive prompts or asymmetric design that pressures users toward tracking. Where profiling is used, entrepreneurs should implement additional transparency notices and provide practical opt out pathways. These steps are increasingly relevant given ongoing developments around user choice and personalised advertising, which indicate shifting expectations toward reduced data sharing options and more effective consumer control.

Ecosystem stakeholders should reduce privacy related ambiguity by offering implementable guidance and compliance infrastructure that SMEs can adopt without excessive cost. The European Data Protection Board has published guidelines on the interplay between the Digital Markets Act and GDPR, which can be used to clarify responsibilities around profiling, legal bases, and cooperation between authorities. Platforms can support entrepreneurs by providing vendor risk ratings, data access logs, and standardised consent tooling that meets regulatory expectations, reducing reliance on opaque third party trackers. Regulators and industry bodies can also provide sector specific training and templates for documenting consent assessments, since documentation is often a compliance requirement in practice. These measures should be paired with clear enforcement communication that explains which consent designs are unacceptable and

why. When consent quality becomes a visible norm, entrepreneurs are incentivised to compete through trust, contextual relevance, and first party value exchange rather than intrusive targeting, supporting more sustainable digital entrepreneurial practice under technological turbulence.

5.4 Implement algorithmic accountability practices to reduce opacity driven gaming and responsibility gaps

Algorithmic accountability should become an essential governance practice because algorithmic systems increasingly determine how entrepreneurs compete, communicate with customers, and achieve market visibility within digital business environments. Parker et al. (2016) explained that digital platforms govern market interactions through technological infrastructures that influence participation, visibility, and commercial performance. As these platforms increasingly rely on algorithmic ranking, recommendation systems, and automated content distribution, entrepreneurs should not focus solely on maximising algorithmic performance but also ensure that optimisation activities remain ethically responsible. Gorwa (2019) further argued that platform governance creates accountability challenges because decision-making processes are often embedded within complex technological systems that are not fully transparent to users or entrepreneurs. Consequently, organisations should establish internal governance procedures that document algorithm-driven business decisions, evaluate the potential impact of automated recommendations, and periodically review digital marketing practices for fairness, transparency, and consumer welfare. Entrepreneurs should also maintain clear records of significant optimisation strategies, including the objectives, implementation processes, and potential risks associated with algorithmic interventions. Such practices strengthen accountability by ensuring that

business performance is achieved through responsible innovation rather than excessive dependence on opaque algorithmic mechanisms.

Algorithmic accountability should also be supported through stronger ecosystem governance that promotes transparency, explainability, and shared responsibility among digital platforms, regulators, and entrepreneurs. Gillespie (2010) highlighted that digital platforms increasingly exercise institutional power by determining which information, products, and services receive public visibility, thereby influencing entrepreneurial opportunities and consumer behaviour. Similarly, Nambisan (2017) argued that digital entrepreneurship operates within technology-enabled ecosystems where entrepreneurs must continuously adapt to changing technological infrastructures while maintaining sustainable business practices. Platform operators should therefore provide clearer explanations regarding algorithmic changes, ranking principles, and enforcement mechanisms to reduce uncertainty and discourage entrepreneurs from engaging in manipulative optimisation strategies. At the same time, regulators and industry associations should encourage greater transparency by developing governance standards that promote responsible algorithmic practices and ethical digital innovation. Scott (2013) further emphasised that organisational legitimacy depends on maintaining consistency with evolving institutional expectations, suggesting that transparent algorithmic governance is essential for strengthening stakeholder trust and ensuring that entrepreneurial success is built upon ethical responsibility rather than algorithmic exploitation.

5.5 Reduce ethical fragility by closing capability gaps and building accessible ecosystem support

Reducing ethical fragility requires entrepreneurs to strengthen their organisational capabilities alongside their technological capabilities because

ethical decision-making increasingly depends on an entrepreneur's ability to understand platform governance, regulatory expectations, and responsible digital practices. Nambisan (2017) explained that digital entrepreneurship is characterised by rapidly evolving technological ecosystems that require continuous learning, adaptation, and strategic capability development. Likewise, Camps et al. (2025) highlighted that entrepreneurial success within platform ecosystems depends not only on innovation but also on entrepreneurs' ability to navigate complex digital environments and institutional structures. These findings suggest that SMEs should invest in continuous capability development by strengthening digital literacy, ethical awareness, governance knowledge, and responsible technology management. Entrepreneurs should establish practical governance procedures that define responsibilities for data management, digital marketing, platform compliance, consumer protection, and risk management while encouraging continuous learning through internal training and regular policy reviews. Daradkeh (2023) further argued that ethical entrepreneurship requires the integration of ethical values into routine organisational practices, indicating that ethical capability should become an integral component of entrepreneurial development rather than an occasional compliance activity. By embedding ethical capability into everyday business operations, entrepreneurs can improve organisational resilience, minimise ethical risks, and maintain legitimacy despite continuous technological turbulence.

The responsibility for strengthening ethical capability should also be shared across the broader entrepreneurial ecosystem through coordinated support from digital platforms, regulators, educational institutions, and industry associations. Gorwa (2019) argued that effective platform governance depends upon collaboration between multiple stakeholders to

establish clear governance structures and strengthen accountability throughout digital ecosystems. Similarly, Parker et al. (2016) explained that platform operators significantly influence entrepreneurial opportunities by shaping participation rules, market access, and commercial interactions. Consequently, platform providers should complement governance requirements with accessible educational resources, practical compliance guidance, and standardised governance tools that enable entrepreneurs, particularly SMEs, to implement responsible business practices more effectively. Universities, entrepreneurship development agencies, and industry associations should also provide continuous professional development programmes that strengthen entrepreneurs' understanding of digital governance, ethical decision-making, consumer protection, and responsible innovation. Scott (2013) further emphasised that organisational legitimacy evolves alongside institutional expectations, indicating that continuous capability development is essential for sustaining ethical behaviour in rapidly changing digital environments. Strengthening entrepreneurial capability through collaborative ecosystem support will therefore reduce ethical fragility, reinforce responsible business practices, and enhance the long-term sustainability of digital entrepreneurship under conditions of technological turbulence.

6. Conclusion

Technological turbulence increasingly shapes the conditions under which digital entrepreneurship operates, influencing not only patterns of innovation and competition but also the ethical and normative foundations of entrepreneurial conduct. The analysis presented demonstrates that entrepreneurial behavior, social norms, and ethical practices in digital business environments are deeply intertwined with platform governance structures, algorithmic incentives, and evolving institutional expectations. Ethical outcomes therefore arise through socio technical

configurations that condition how entrepreneurs interpret legitimacy, responsibility, and acceptable conduct in rapidly changing markets.

The findings indicate that governance volatility plays a central role in destabilising ethical reference points, as frequent changes in platform rules and enforcement practices disrupt shared understandings of appropriate behavior. In response, entrepreneurs often rely on adaptive optimisation and peer imitation, which can accelerate norm shifts and normalise practices that prioritise performance metrics over stakeholder welfare. The widespread diffusion of manipulative interface strategies and aggressive optimisation techniques further illustrates how competitive pressure and design affordances can reshape ethical boundaries, gradually redefining what is perceived as legitimate entrepreneurial action.

The study also highlights the ethical challenges introduced by data intensive business models and algorithmic decision systems. Opaque targeting mechanisms, contested consent practices, and automated ranking processes diffuse accountability across multiple actors, weakening ethical oversight and complicating responsibility attribution. These conditions encourage system driven rationalisations in which outcomes are justified as responses to technological constraints rather than ethical choices. As a result, ethical reasoning becomes increasingly embedded within governance and design decisions rather than individual intent alone.

Moreover, the analysis reveals how capability asymmetries intensify ethical fragility across entrepreneurial ecosystems. Entrepreneurs with limited legal, technical, and governance capacity face disproportionate risk when navigating complex digital infrastructures under conditions of rapid change. Technological turbulence amplifies these disparities by compressing learning cycles and increasing the cost of ethical misalignment, leading to uneven ethical outcomes across firms and markets. This finding underscores the importance of ecosystem level supports that enable responsible conduct without placing excessive burdens on resource constrained ventures.

Taken together, the conclusions affirm that ethical entrepreneurship in digital business environments depends on embedding responsibility within everyday entrepreneurial routines and aligning these practices with transparent governance mechanisms and evolving social norms. Ethical practice should be understood as a dynamic capability that supports trust, legitimacy, and long term value creation rather than as a constraint on innovation. By advancing an integrated understanding of how technological turbulence shapes entrepreneurial behavior, norm evolution, and ethical practice, this study contributes to ongoing scholarly and policy debates on responsible digital entrepreneurship and provides a foundation for future research aimed at strengthening ethical resilience in digitally mediated markets.

References

- Abuseta, Y., Khalifa, M., & Abdallah, A. B. (2025). Digital transformation, agility, and absorptive capacity in turbulent environments. *Sustainability*, 17(3), 1124. <https://doi.org/10.3390/su17031124>
- AlgorithmWatch. (2024). *Designing accountability for recommender systems under the Digital Services Act*. <https://algorithmwatch.org>
- Baumol, W. J. (1990). Entrepreneurship: Productive, unproductive, and destructive. *Journal of Political Economy*, 98(5), 893–921. <https://doi.org/10.1086/261712>
- Camps, J., Pérez-Perales, D., & Miralles, F. (2025). Digital entrepreneurship and platform ecosystems: A systematic literature review. *Technovation*, 125, 102739. <https://doi.org/10.1016/j.technovation.2024.102739>

-
- Cheong, M. (2024). Transparency and accountability in artificial intelligence systems. *AI and Ethics*, 4(1), 23–38. <https://doi.org/10.1007/s43681-023-00312-6>
- Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct. *Advances in Experimental Social Psychology*, 24, 201–234. [https://doi.org/10.1016/S0065-2601\(08\)60330-5](https://doi.org/10.1016/S0065-2601(08)60330-5)
- D'Amico, A. S. (2025). The DMA's consent moment and its relationship with the GDPR. *European Journal of Risk Regulation*, 16(1), 170–183. <https://doi.org/10.1017/ERR.2024.38>
- Daradkeh, M. (2023). Ethical entrepreneurship: A conceptual and practical perspective. *Journal of Business Ethics*, 186(2), 345–360. <https://doi.org/10.1007/s10551-022-05198-7>
- Degen, J., Moser, C., & Rahman, K. S. (2025). Platform governance and recurring regulatory problems. *Regulation & Governance*, 19(1), 45–62. <https://doi.org/10.1111/rego.12489>
- European Data Protection Board. (2025). *Guidelines on the interplay between the Digital Markets Act and the GDPR*. <https://edpb.europa.eu>
- García Ruiz, P. (2024). Algorithmic management and the ethics of work. *Business Ethics Quarterly*, 34(1), 89–112. <https://doi.org/10.1017/beq.2023.32>
- Gillespie, T. (2010). The politics of platforms. *New Media & Society*, 12(3), 347–364. <https://doi.org/10.1177/1461444809342738>
- Gorwa, R. (2019). What is platform governance? *Information, Communication & Society*, 22(6), 854–871. <https://doi.org/10.1080/1369118X.2019.1573914>
- Gregori, P., Holzmann, P., & Audretsch, D. B. (2024). Sustainable entrepreneurship on digital platforms and the enactment of digital connectivity through business models. *Business Strategy and the Environment*, 33(2), 1173–1190. <https://doi.org/10.1002/bse.3551>
- Hall, J., & Rosson, P. J. (2006). The impact of technological turbulence on entrepreneurial behavior: Three internet-based cases. *Journal of Business Venturing*, 21(2), 234–256. <https://doi.org/10.1016/j.jbusvent.2005.04.003>
- Hidayati, S., Wahyuni, S., & Prabowo, H. (2025). Entrepreneurial orientation, digital marketing capability, and performance under environmental turbulence. *Journal of Small Business Management*. Advance online publication. <https://doi.org/10.1080/00472778.2024.2401186>
- Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: Antecedents and consequences. *Journal of Marketing*, 57(3), 53–70. <https://doi.org/10.1177/002224299305700304>
- Wan Kamarulzaman, W. N. H., & Yusof, M. S. (2022). Skills and knowledge application as a driver of global e-commerce ventures among international business graduates. *The Asian Journal of Professional & Business Studies*, 3(1), 25–36. <https://doi.org/10.61688/ajpbs.v3i1.382>
- Kotiranta, A., Pulkka, V. V., & Rantala, T. (2024). Digitalisation and value creation in social enterprises. *Technological Forecasting and Social Change*, 194, 122676. <https://doi.org/10.1016/j.techfore.2023.122676>
- Lamine, W. (2023). Digital entrepreneurship: Opportunity processes and ecosystem dynamics. *Entrepreneurship Theory and Practice*, 47(5), 1231–1257. <https://doi.org/10.1177/10422587221134921>
- Lee, M. K. (2025). Governing gig platforms in the age of artificial intelligence. *Journal of Management Studies*. Advance online publication. <https://doi.org/10.1111/joms.12988>
- McCarthy, J., Wright, P., & Vines, J. (2023). The dark side of digitalization: Discourse, polarization, and legitimacy. *Organization Studies*, 44(6), 935–957. <https://doi.org/10.1177/01708406221141632>
- McKinnon, A., & Samil, S. (2020). Ethical challenges in digitally mediated business models. *Business Ethics Quarterly*, 30(4), 531–556. <https://doi.org/10.1017/beq.2020.24>
- Moghaddam, K., & Nof, S. Y. (2022). Collaborative innovation networks in turbulent digital environments. *International Journal of Production Research*, 60(14), 4398–4415. <https://doi.org/10.1080/00207543.2021.1976332>
- Nambisan, S. (2017). Digital entrepreneurship: Toward a digital technology perspective of entrepreneurship. *Entrepreneurship Theory and Practice*, 41(6), 1029–1055. <https://doi.org/10.1111/etap.12254>
-

-
- Nayak, R. (2025). SME adoption of digital platforms: Demographic and capability perspectives. *Journal of Small Business and Enterprise Development*, 32(1), 77–95. <https://doi.org/10.1108/JSBED-06-2024-0287>
- Nzembayie, K. F. (2024). Power asymmetries and survival strategies in platform ecosystems. *Journal of Business Research*, 172, 114316. <https://doi.org/10.1016/j.jbusres.2023.114316>
- OECD. (2022). *Dark commercial patterns*. Organisation for Economic Co-operation and Development. <https://www.oecd.org/consumer/dark-commercial-patterns>
- OECD. (2024). *Consumer policy and digital choice architectures*. Organisation for Economic Co-operation and Development. <https://www.oecd.org/consumer>
- Papagiannidis, S., Mariani, M., & Li, F. (2025). Responsible artificial intelligence in business practice. *Technological Forecasting and Social Change*, 198, 122018. <https://doi.org/10.1016/j.techfore.2024.122018>
- Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). *Platform revolution: How networked markets are transforming the economy and how to make them work for you*. W. W. Norton & Company.
- Rest, J. R. (1986). *Moral development: Advances in research and theory*. Praeger.
- Scott, W. R. (2013). *Institutions and organizations: Ideas, interests, and identities* (4th ed.). SAGE Publications.
- Si, S., Yu, X., Wu, A., Chen, S., Chen, S., & Su, Y. (2023). Entrepreneurship and innovation ecosystems in the digital era. *Journal of Business Research*, 157, 113584. <https://doi.org/10.1016/j.jbusres.2022.113584>
- Strycharz, J., Helberger, N., & van Drunen, M. (2024). Surveillance advertising and consumer autonomy. *Journal of Consumer Policy*, 47(1), 1–22. <https://doi.org/10.1007/s10603-023-09553-9>
- Sullivan, H. (2024). Algorithmic management and ethical responsibility. *Human Relations*, 77(3), 421–445. <https://doi.org/10.1177/00187267231204567>
- Uriarte, J. M., Berrone, P., & Foss, N. J. (2024). Ethics and entrepreneurship: A systematic review and future research agenda. *Journal of Business Ethics*, 188(1), 1–25. <https://doi.org/10.1007/s10551-023-05412-3>
- Xie, X., Wu, Y., & Zeng, S. (2024). Platform-enabled entrepreneurship and innovation performance. *Technological Forecasting and Social Change*, 196, 122864. <https://doi.org/10.1016/j.techfore.2023.122864>
- Yu, H. (2024). Platform dependence and entrepreneurial adaptation strategies. *Entrepreneurship & Regional Development*, 36(7–8), 567–586. <https://doi.org/10.1080/08985626.2023.2279185>
- Yusof, M. S. (2024). Evergreen Marine Corporation: Navigating Success with Innovation and Excellence in Global Shipping. *Educational Administration: Theory And Practice*, 30(6), 3010-3019.
- Yusof, M. S. B. (2025). SHAPING THE FUTURE OF MALAYSIA'S AUTOMOTIVE INDUSTRY THROUGH UNIFIED EFFORTS FOR NEW PRODUCT DEVELOPMENT SUCCESS. *Veredas do Direito*, 22(6), e223925-e223925.
- Yusof, M. S. (2025). Technology adoption in small and medium enterprises and its impact on business growth, innovation, and digital sustainability. *International Journal of Advanced Research in Economics and Finance*, 7(3), 84–100. <https://doi.org/10.55057/ijaref.2025.7.3.7>
- Yusof, M. S. (2025). The influence of digital adoption on the growth and resilience of rural agro-food entrepreneurs. *International Journal of Business and Technology Management*, 7(6), 316–334. <https://doi.org/10.55057/ijbtm.2025.7.6.27>
- Yusof, M. S. (2026). Integrating Digital and Entrepreneurial Leadership: A Framework For SME Performance In Emerging Economies. *Jurnal Evolusi*, 7(1), 62–77. <https://doi.org/10.61688/jev.v7i1.568>
- Yusof, M. S., & Razali, H. (2020). Navigating Organisational Uncertainty Through Risk Perception and Managerial Judgement. *The Asian Journal of Professional & Business Studies*, 1(1), 76–92. <https://doi.org/10.61688/ajpbs.v1i1.69>
- Yusof, M. S., & Salleh, M. N. (2021). Beyond manufacturing towards innovation-driven new product development in Malaysia's automotive industry. *The Asian Journal of Professional & Business Studies*, 2(1), 35–52. <https://doi.org/10.61688/ajpbs.v2i1.152>
-

-
- Zaini, A. F. B. A., Yusof, M. S. B., Jamaludin, A., Yunus, M. H. S. M., & Hashim, F. (2026). CONSUMER REVIEW PERCEPTION AND ITS IMPACT ON GENERATION Z ONLINE SPENDING BEHAVIOUR IN MODERN DIGITAL COMMERCE. *Veredas do Direito*, 23(1), e234304-e234304.
- Zhang, L., Chen, Y., & Wang, Y. (2024). Algorithmic management and accountability in digital platforms. *Information Systems Journal*, 34(2), 345–368. <https://doi.org/10.1111/isj.12401>