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Human–AI Co-Entrepreneurship in FinTech: A Multi-Stakeholder Exploration of Agentic AI in Entrepreneurial Finance and Consumer Engagement

Mohsin Khan¹ Saba Naz² Muhammad Vahaj Ur Rehman³ Dr. Kashif Abrar⁴ Syed Adil Abbas Rizvi⁵

¹ Financial Analyst, Digital Finance & Revenue Cycle Analytics North American Clinical Associates.

² Visiting Faculty Member, Department of Economics, Sir Syed Engineering University, Karachi, Sindh, Pakistan.

³ MSC Research Scholar GEM Alpine Business School, France.

⁴ Visiting Faculty Member, Department of Business Studies, Bahria University, Islamabad, Punjab, Pakistan.

⁵ Senior Manager, Business Process Reengineering (PMO) Bank Al Habib Ltd., Karachi, Sindh, Pakistan.

Corresponding Author: Mohsin Khan, Email: mkhan@northaca.com

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ABSTRACT

The rapid advancement of Agentic Artificial Intelligence is reshaping entrepreneurial ecosystems by transforming financial decision-making, business innovation, and consumer engagement within the FinTech sector. This study explores how different stakeholders perceive the collaborative relationship between humans and Agentic AI in entrepreneurial finance and digital financial services. Semi-structured interviews were conducted with 18 participants, including entrepreneurs, FinTech executives, investors, and consumers actively engaged in Pakistan's digital financial ecosystem. The interview data were analyzed using thematic analysis to identify shared experiences and emerging patterns. The findings generated five overarching themes: collaborative entrepreneurial decision-making, AI-enabled financial innovation, personalized consumer engagement, trust and ethical governance, and the evolving future of AI-assisted entrepreneurship. Participants perceived Agentic AI as a strategic collaborator capable of improving financial planning, accelerating innovation, enhancing customer experiences, and supporting entrepreneurial growth. However, concerns regarding transparency, accountability, privacy, and excessive reliance on autonomous systems remain significant barriers to widespread adoption. The study develops a multi-stakeholder conceptual framework illustrating how Human–AI co-entrepreneurship can promote sustainable innovation, responsible financial services, and long-term value creation within the evolving FinTech ecosystem.



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Introduction

Background of the Research

The emergence of Agentic Artificial Intelligence (Agentic AI) marks a significant evolution in artificial intelligence, moving beyond traditional predictive and generative systems toward autonomous agents capable of perceiving environments, making context-aware decisions, learning continuously, and executing complex tasks with minimal human intervention (Islam et al., 2026). Unlike conventional AI applications that primarily support human decision-making, Agentic AI functions as an active collaborator capable of independently analyzing information, coordinating workflows, and adapting to changing business environments (Al-Bashrawi et al., 2026). This transition is transforming entrepreneurial ecosystems, where intelligent agents increasingly contribute to opportunity recognition, financial planning, investment analysis, customer relationship management, and strategic business development (Jeremiah, 2025).

The financial technology (FinTech) sector represents one of the most dynamic environments for the deployment of Agentic AI. Digital financial platforms are integrating autonomous AI agents into lending decisions, fraud detection, investment advisory services, digital banking, and customer engagement to improve operational efficiency and enhance user experiences (Elgendy et al., 2025; Gong, 2026). Simultaneously, entrepreneurs are leveraging these technologies not merely as analytical tools but as collaborative partners that assist in evaluating business opportunities, optimizing financial decisions, and accelerating innovation (Hornuf & Mattusch, 2025). Consequently, the relationship between humans and AI is evolving from simple automation toward a model of Human–AI co-entrepreneurship, where entrepreneurial success emerges through complementary collaboration between human creativity and machine intelligence.

The growing influence of Agentic AI also extends to consumer engagement within digital financial services. Personalized financial recommendations, intelligent virtual advisors, automated investment management, and adaptive customer support are reshaping interactions between financial institutions and consumers

(Hentzen et al., 2022; Tang & Son, 2026). However, alongside these opportunities, concerns regarding transparency, algorithmic accountability, privacy protection, ethical governance, and excessive dependence on autonomous systems continue to challenge the responsible adoption of Agentic AI (Inala & Somu, 2025; Bhat & Krishnan, 2025). Understanding how different stakeholders perceive these opportunities and challenges has therefore become increasingly important for developing sustainable and trustworthy AI-enabled financial ecosystems.

Recent advances in artificial intelligence have accelerated the transformation of entrepreneurship from technology-assisted decision-making to collaborative intelligence, where humans and autonomous AI agents jointly participate in strategic business activities. Contemporary Agentic AI systems are capable of autonomous reasoning, long-term planning, adaptive learning, and multi-step decision execution, enabling organizations to redesign entrepreneurial processes and financial services (Islam et al., 2026; Huang et al., 2025). Within FinTech, these capabilities are facilitating intelligent credit assessment, portfolio optimization, financial forecasting, fraud prevention, and personalized customer engagement, thereby creating new opportunities for innovation and value creation (Somu, 2025; Dodda, 2025).

Emerging economies such as Pakistan present a particularly relevant context for examining Human–AI co-entrepreneurship. The rapid growth of digital banking, mobile payment platforms, fintech startups, and technology-driven entrepreneurial ventures has created an ecosystem where AI-enabled financial services are increasingly influencing entrepreneurial activities and consumer experiences (Arzu et al., 2025). Nevertheless, entrepreneurs continue to face financial constraints, limited access to investment, and institutional challenges that restrict innovation and business growth (Ashraf et al., 2025). Agentic AI has the potential to address many of these challenges by improving financial intelligence, reducing information asymmetry, and supporting entrepreneurial decision-making. Despite these developments, empirical evidence explaining how entrepreneurs, investors, FinTech executives, and consumers collectively perceive

AI-assisted entrepreneurship remains limited.

Problem Statement

Existing research has extensively examined artificial intelligence in financial services, digital banking, entrepreneurial finance, and customer engagement independently (Hentzen et al., 2022; Pal et al., 2023). More recent studies have introduced the concept of Agentic AI and highlighted its transformative potential for innovation and entrepreneurship (Al-Bashrawi et al., 2026; Elgendy et al., 2025). However, the current literature remains fragmented, with limited attention devoted to understanding Human–AI co-entrepreneurship from a multi-stakeholder perspective. Most existing studies emphasize technological capabilities, algorithmic performance, or consumer adoption while overlooking how entrepreneurs, investors, FinTech executives, and consumers collectively experience collaboration with autonomous AI systems during entrepreneurial finance and digital financial interactions (Hornuf & Mattusch, 2025; Jeremiah, 2025). This gap is particularly evident in emerging economies such as Pakistan, where the institutional, technological, and entrepreneurial context differs considerably from developed markets. Addressing this gap requires an in-depth qualitative exploration capable of capturing the diverse experiences, expectations, and concerns of multiple stakeholders regarding the evolving role of Agentic AI in entrepreneurial finance and consumer engagement.

Research Questions

This study addresses the following research questions:

RQ1: How do entrepreneurs, investors, FinTech executives, and consumers perceive Human–AI co-entrepreneurship within the FinTech ecosystem?

RQ2: How does Agentic AI influence entrepreneurial finance and business innovation?

RQ3: How does Agentic AI transform consumer engagement and digital financial experiences?

RQ4: What ethical, governance, and trust-related concerns shape stakeholders' acceptance of Human–AI collaboration?

RQ5: How can Human–AI co-entrepreneurship contribute to sustainable innovation and long-term

value creation within FinTech?

Research Objectives

The objectives of this study are:

1. To explore stakeholders' perceptions of Human–AI co-entrepreneurship in the FinTech sector.
2. To investigate the role of Agentic AI in entrepreneurial finance and business innovation.
3. To examine how Agentic AI enhances consumer engagement in digital financial services.
4. To identify the ethical, governance, and trust challenges associated with Human–AI collaboration.
5. To develop a multi-stakeholder conceptual understanding of Human–AI co-entrepreneurship that supports sustainable innovation and responsible financial services.

Significance of the Research

This study contributes to the growing literature on Agentic AI, entrepreneurship, and FinTech by providing one of the earliest qualitative investigations of Human–AI co-entrepreneurship from a multi-stakeholder perspective. Theoretically, it extends emerging discussions on collaborative intelligence by integrating entrepreneurial finance, consumer engagement, and responsible AI governance into a unified conceptual framework (Al-Bashrawi et al., 2026; Elgendy et al., 2025). Methodologically, the study enriches existing knowledge through in-depth qualitative insights collected from entrepreneurs, investors, FinTech executives, and consumers, thereby moving beyond the predominantly conceptual and quantitative focus of previous research. Practically, the findings offer valuable guidance for entrepreneurs, financial institutions, technology developers, investors, and policymakers seeking to design transparent, trustworthy, and human-centered AI systems that promote innovation while safeguarding ethical standards. Furthermore, by focusing on Pakistan's rapidly evolving digital financial ecosystem, the study provides context-specific evidence that can inform AI adoption strategies across emerging economies and contribute to the development of inclusive, sustainable, and responsible

entrepreneurial ecosystems.

Literature Review

The rapid evolution of artificial intelligence (AI) has fundamentally transformed entrepreneurial ecosystems, financial services, and consumer interactions. While early AI applications primarily focused on automation, prediction, and decision support, recent advancements have introduced Agentic Artificial Intelligence (Agentic AI), characterized by autonomous reasoning, adaptive learning, goal-oriented decision-making, and continuous interaction with dynamic environments (Islam et al., 2026). Unlike conventional AI systems that operate under predefined rules, Agentic AI functions as an intelligent collaborator capable of independently planning, executing, and refining complex tasks while interacting with human stakeholders (Al-Bashrawi et al., 2026). This transition has significant implications for entrepreneurship, where AI is increasingly viewed not merely as a technological tool but as a strategic partner contributing to opportunity recognition, business innovation, financial planning, and customer engagement (Jeremiah, 2025). Consequently, scholars have begun exploring the concept of Human–AI co-entrepreneurship, which emphasizes collaborative intelligence between entrepreneurs and autonomous AI agents to create sustainable business value and competitive advantage (Rezazadeh & Bonehgazy, 2025).

Within the FinTech sector, Agentic AI has accelerated digital transformation by improving financial decision-making, enhancing customer experiences, optimizing operational efficiency, and supporting innovation across financial ecosystems (Elgendy et al., 2025). Intelligent financial agents now perform tasks ranging from automated investment advisory and fraud detection to personalized financial planning and real-time customer assistance (Gong, 2026; Huang et al., 2025). Simultaneously, entrepreneurs increasingly rely on AI-driven insights to evaluate market opportunities, manage financial risks, optimize resource allocation, and develop customer-centric business models (Hornuf & Mattusch, 2025). Despite these technological advancements, the successful integration of Human–AI collaboration depends on stakeholders' perceptions regarding trust,

transparency, governance, ethical responsibility, and the complementary roles of humans and intelligent machines (Bhat & Krishnan, 2025; Inala & Somu, 2025). Accordingly, existing literature provides a valuable foundation for understanding how Agentic AI is reshaping entrepreneurship, FinTech innovation, and consumer engagement while highlighting important gaps requiring further investigation.

The growing convergence of Agentic Artificial Intelligence, FinTech, and entrepreneurship has generated increasing scholarly attention toward intelligent financial ecosystems, digital innovation, and customer engagement. Existing studies have examined AI-enabled consumer behavior (Abrar, 2018), immersive digital experiences through metaverse-based marketing (Abrar & Amjad, 2026), the role of FinTech literacy in shaping digital entrepreneurial intentions (Pham et al., 2025), and the transformation of modern banking infrastructure through artificial intelligence, machine learning, and Agentic AI (Somu, 2025). Collectively, these studies provide important insights into AI-driven entrepreneurial finance and digital transformation while highlighting the need for integrated research on Human–AI co-entrepreneurship within evolving FinTech ecosystems.

Theoretical Framework

This study is anchored in the emerging concept of Human–AI Co-Agency Theory, which conceptualizes entrepreneurship as a collaborative process involving complementary interactions between human intelligence and autonomous AI agents. Rather than replacing entrepreneurs, Agentic AI enhances human capabilities by providing analytical intelligence, autonomous decision support, adaptive learning, and continuous optimization while humans contribute creativity, ethical reasoning, contextual understanding, and strategic judgment (Al-Bashrawi et al., 2026). Human–AI Co-Agency therefore represents a partnership in which entrepreneurial outcomes emerge from the integration of technological intelligence and human expertise rather than from either actor independently.

The theoretical perspective also draws upon the broader entrepreneurial ecosystem literature, which emphasizes collaboration among

entrepreneurs, investors, technology providers, customers, and institutions to generate innovation and sustainable competitive advantage (Sophocleous, 2025). Within FinTech environments, Agentic AI strengthens these interactions by facilitating intelligent financial analysis, personalized customer engagement, autonomous business processes, and collaborative decision-making (Elgendy et al., 2025). Simultaneously, human oversight remains essential to ensure ethical governance, transparency, accountability, and regulatory compliance, particularly in financial services where trust represents a critical determinant of adoption (Kismawadi, 2025; Inala & Somu, 2025). Consequently, Human–AI Co-Agency provides an appropriate theoretical lens for examining how multiple stakeholders jointly perceive the evolving role of autonomous AI within entrepreneurial finance and digital financial ecosystems.

Agentic AI and Human–AI Co-Entrepreneurship

Agentic AI represents one of the most significant developments in contemporary artificial intelligence because it enables autonomous systems to reason, plan, execute, and adapt without continuous human supervision (Islam et al., 2026). Unlike traditional machine learning models that perform isolated analytical tasks, Agentic AI integrates perception, memory, planning, and decision-making into intelligent workflows capable of pursuing long-term objectives (Gong, 2026). Such capabilities have encouraged researchers to reconsider AI not as a passive technological resource but as an active organizational participant capable of collaborating with entrepreneurs throughout the innovation process (Jeremiah, 2025).

Recent studies argue that entrepreneurial success increasingly depends on collaborative intelligence, where entrepreneurs leverage Agentic AI to evaluate opportunities, identify market trends, optimize business models, and reduce uncertainty during venture creation (Al-Bashrawi et al., 2026). Rather than replacing entrepreneurial judgment, AI complements human intuition by processing large volumes of financial and market data more efficiently than traditional decision-making approaches (Hornuf

& Mattusch, 2025). Rezazadeh and Bonehgazy (2025) further introduced the concept of digital co-founders, suggesting that autonomous AI agents can independently perform strategic business activities traditionally executed by entrepreneurial teams. Similarly, Kolade et al. (2026) demonstrated that AI has become an important catalyst for microentrepreneurs by improving productivity, reducing information barriers, and facilitating access to digital markets within informal economies. These developments collectively illustrate the emergence of Human–AI co-entrepreneurship as an innovative paradigm that integrates technological intelligence with entrepreneurial capabilities.

Agentic AI in Entrepreneurial Finance

Entrepreneurial finance has experienced profound transformation through the integration of artificial intelligence into financial planning, investment evaluation, risk management, and funding decisions. Traditional entrepreneurial finance often relies upon subjective judgment and incomplete information, whereas Agentic AI enhances financial decision-making through predictive analytics, autonomous reasoning, and continuous market monitoring (Hornuf & Mattusch, 2025). Intelligent financial agents can evaluate investment opportunities, assess entrepreneurial risk, forecast business performance, and recommend financing alternatives with greater speed and analytical precision than conventional approaches (Gong, 2026).

Within modern FinTech ecosystems, autonomous AI agents increasingly support venture capital evaluation, digital lending, crowdfunding platforms, decentralized finance, and entrepreneurial investment strategies (Naseer et al., 2026). Prakash and Burra (2026) argue that AI significantly improves financing opportunities for social entrepreneurs by enhancing investment transparency, identifying suitable funding sources, and reducing information asymmetry between entrepreneurs and investors. Likewise, Oyedokun et al. (2025) observed that AI-driven financial technologies contribute to financial inclusion by expanding access to entrepreneurial financing among underserved populations.

Emerging economies present particularly compelling contexts for AI-enabled

entrepreneurial finance. Pakistan's expanding FinTech ecosystem has created new opportunities for startups, digital banking, and entrepreneurial innovation despite persistent financial constraints (Arzu et al., 2025). Nevertheless, many entrepreneurs continue experiencing limited access to institutional finance, information asymmetry, and investment uncertainty (Ashraf et al., 2025). Agentic AI offers considerable potential to address these challenges by improving financial intelligence, enhancing strategic planning, and supporting evidence-based entrepreneurial decision-making (Dodda, 2025).

AI-Driven FinTech Innovation

Innovation remains central to FinTech development, and Agentic AI has emerged as a critical technological enabler of intelligent financial ecosystems. Financial institutions increasingly employ autonomous AI agents to automate operational processes, detect fraudulent activities, optimize customer interactions, and improve financial forecasting (Elgendy et al., 2025). These intelligent systems continuously learn from transactional data, adapt to changing market conditions, and independently execute financial operations while maintaining high levels of accuracy and efficiency (Somu, 2025).

Pal et al. (2023) describe FinTech agents as intelligent technologies capable of integrating artificial intelligence, machine learning, blockchain, and cloud computing to create adaptive financial services. Similarly, Huang et al. (2025) explain that AI agents have become fundamental components of modern banking through intelligent credit scoring, portfolio management, compliance monitoring, and personalized customer advisory services. Somu's work on intelligent banking infrastructure further emphasizes that Agentic AI is transforming financial institutions into adaptive ecosystems capable of delivering continuous innovation while improving operational resilience and customer satisfaction (Somu, 2025).

Furthermore, Dodda (2025) argues that AI-driven financial transformation extends beyond operational efficiency by enabling governments, financial institutions, and entrepreneurs to make evidence-based economic decisions using predictive intelligence. Consequently, Agentic AI has become a strategic resource supporting

sustainable innovation, competitive advantage, and digital transformation throughout contemporary financial ecosystems.

Consumer Engagement, Trust, and Responsible AI Governance

Consumer engagement has become increasingly important as financial institutions integrate intelligent AI agents into customer-facing services. Personalized financial recommendations, intelligent virtual assistants, automated investment advisors, and adaptive customer support systems enable financial institutions to develop stronger relationships with consumers while improving service quality and customer satisfaction (Hentzen et al., 2022). Rather than providing standardized financial services, Agentic AI facilitates highly personalized customer experiences based on continuous analysis of consumer preferences, behaviors, financial goals, and contextual information (Tang & Son, 2026).

Research indicates that AI-enabled personalization significantly enhances perceived service quality, customer loyalty, engagement, and decision confidence within digital financial environments (Inala & Somu, 2024). However, these benefits are accompanied by growing concerns regarding algorithmic transparency, data privacy, cybersecurity, fairness, and excessive dependence on autonomous systems (Inala & Somu, 2025). Kumar and Sharma (2025) further demonstrate that consumers' willingness to adopt Agentic AI depends not only on technological capabilities but also on perceptions of vulnerability, trustworthiness, and psychological comfort when interacting with intelligent machines.

Ethical governance therefore represents an essential prerequisite for successful Human–AI collaboration within entrepreneurial finance. Kismawadi (2025) argues that human-centered AI should preserve ethical values, accountability, and social responsibility while supporting innovation, particularly within Islamic financial systems where fairness, transparency, and trust remain foundational principles. Likewise, Bhat and Krishnan (2025) emphasize that responsible AI governance requires explainable algorithms, human oversight, regulatory compliance, and transparent decision-making processes to

maintain stakeholder confidence. Collectively, these studies suggest that the long-term success of Human–AI co-entrepreneurship depends not solely on technological sophistication but equally on establishing trustworthy governance frameworks that balance innovation with ethical responsibility.

Gaps in Existing Research

The emergence of Agentic Artificial Intelligence has significantly advanced research in entrepreneurship, FinTech, and intelligent financial services, highlighting its potential to transform entrepreneurial decision-making, financial innovation, customer engagement, and organizational performance (Al-Bashrawi et al., 2026; Elgendy et al., 2025; Islam et al., 2026). Nevertheless, important research gaps remain. Existing studies largely conceptualize AI as a decision-support tool rather than an autonomous entrepreneurial collaborator, despite emerging discussions on co-agency, intelligent agents, and digital co-founders (Hentzen et al., 2022; Pal et al., 2023; Al-Bashrawi et al., 2026; Jeremiah, 2025; Rezazadeh & Bonehgazy, 2025). Moreover, the literature remains predominantly conceptual and technology-oriented, with limited attention to stakeholders' lived experiences and collaborative Human–AI interactions (Gong, 2026; Huang et al., 2025; Somu, 2025; Hornuf & Mattusch, 2025; Dodda, 2025). Previous research has also overlooked multi-stakeholder perspectives by examining entrepreneurs, investors, financial institutions, and consumers separately (Oyedokun et al., 2025; Hentzen et al., 2022; Tang & Son, 2026; Kumar & Sharma, 2025).

Furthermore, ethical governance, transparency, trust, and responsible AI implementation remain insufficiently integrated into entrepreneurial research (Inala & Somu, 2025; Bhat & Krishnan, 2025; Kismawadi, 2025). Another important limitation is the scarcity of empirical evidence from emerging economies such as Pakistan, where FinTech adoption continues to expand despite institutional and financial challenges (Elgendy et al., 2025; Gong, 2026; Islam et al., 2026; Arzu et al., 2025; Ashraf et al., 2025). Finally, limited integration of entrepreneurship, FinTech, consumer engagement, and qualitative theory-building restricts understanding of Human–AI co-entrepreneurship (Pal et al., 2023; Hentzen et al.,

2022; Hornuf & Mattusch, 2025; Islam et al., 2026). Addressing these gaps, this study adopts a multi-stakeholder qualitative approach to develop a comprehensive framework explaining how Human–AI collaboration fosters sustainable innovation and entrepreneurial value creation within Pakistan's evolving FinTech ecosystem.

Research Methodology

Research Design

This study adopted a qualitative exploratory research design grounded in the interpretivist research paradigm to explore how multiple stakeholders perceive Human–AI co-entrepreneurship within Pakistan's evolving FinTech ecosystem. A qualitative approach was considered appropriate because the phenomenon of Agentic AI in entrepreneurial finance remains relatively new, and limited empirical evidence exists regarding stakeholders' lived experiences, perceptions, and interpretations. Rather than testing predetermined hypotheses, the study sought to generate rich contextual insights into how entrepreneurs, investors, FinTech executives, and consumers understand the opportunities, challenges, and future implications of Human–AI collaboration. Semi-structured interviews were employed to facilitate in-depth discussions while allowing participants to elaborate on their experiences and perspectives. Similar qualitative approaches have been recommended for investigating emerging technological phenomena where theoretical understanding is still evolving (Braun & Clarke, 2021; Terry et al., 2017).

Sampling Strategy

A purposive sampling strategy was employed to recruit participants possessing direct knowledge and practical experience of AI-enabled financial technologies and entrepreneurial activities. Purposive sampling enabled the selection of information-rich participants capable of providing meaningful insights into the evolving relationship between humans and autonomous AI systems. The final sample consisted of 18 participants, including entrepreneurs, FinTech executives, investors, and consumers actively engaged with digital financial services in Pakistan. Participants represented diverse organizational backgrounds and possessed substantial professional or user experience within entrepreneurial finance, digital

banking, AI-enabled financial platforms, and investment ecosystems. The diversity of stakeholder groups enhanced the credibility of the findings by capturing multiple viewpoints regarding Human–AI collaboration (Braun & Clarke, 2019).

Data Collection

Data were collected through semi-structured interviews conducted between January and March 2026. Each interview lasted approximately 45–70 minutes and was conducted either face-to-face or through secure online video conferencing platforms, depending on participant availability. An interview guide was developed based on previous studies on Agentic AI, entrepreneurial finance, FinTech innovation, and consumer engagement (Hornuf & Mattusch, 2025; Elgendy et al., 2025). The interview protocol explored participants' experiences with AI-assisted entrepreneurial decision-making, financial innovation, customer engagement, ethical concerns, trust, and the future role of autonomous AI within entrepreneurial ecosystems. With participants' informed consent, all interviews were audio-recorded and subsequently transcribed verbatim for analysis.

Data Analysis

The interview data were analyzed using reflexive thematic analysis, following the systematic procedures proposed by Braun and Clarke (2019, 2021) and Terry et al. (2017). Initially, interview transcripts were read repeatedly to achieve familiarity with the data. Open coding was then conducted to identify meaningful statements related to Human–AI collaboration. Similar codes were grouped into broader categories, leading to the development of preliminary themes. These themes were continuously reviewed, refined, and interpreted to ensure conceptual coherence and consistency with participants' narratives. The analysis ultimately generated five overarching

themes that captured stakeholders' shared perceptions regarding collaborative entrepreneurial decision-making, financial innovation, consumer engagement, ethical governance, and the future of Human–AI co-entrepreneurship. Throughout the analytical process, reflexive memo writing and iterative comparisons enhanced the credibility and rigor of the thematic interpretation (Braun & Clarke, 2021).

Ethical Considerations

Ethical principles were carefully observed throughout the research process. Prior to participation, all respondents received information regarding the objectives of the study, voluntary participation, confidentiality, anonymity, and their right to withdraw at any stage without consequence. Written informed consent was obtained before commencing each interview. Participants' identities were protected by assigning anonymous identification codes (P1–P18), and no personally identifiable information was reported. Interview recordings and transcripts were securely stored and used solely for academic purposes. The research also adhered to principles of transparency, respect, and responsible AI research by ensuring that participants' views regarding emerging technologies were reported accurately and without bias (Braun & Clarke, 2021; Terry et al., 2017).

Participants' Profile

The study included 18 participants representing four key stakeholder groups within Pakistan's digital financial ecosystem. Their diverse professional backgrounds provided a comprehensive understanding of Human–AI co-entrepreneurship from entrepreneurial, managerial, investment, and consumer perspectives. The table below summarizes the demographic and professional characteristics of the participants.

Table 1: *Participant Profiles*

Participant Code	Stakeholder Group	Current Position	Industry/Sector	Years of Experience	Primary Experience with AI/FinTech
P1	Entrepreneur	Founder & CEO	FinTech Startup	11	AI-enabled digital payments
P2	Entrepreneur	Co-founder	Financial Services	8	AI-based lending solutions
P3	Entrepreneur	Founder	E-commerce FinTech	9	Business analytics and AI decision support
P4	Entrepreneur	Managing Director	Digital Finance	13	Entrepreneurial finance and AI integration
P5	FinTech Executive	Chief Technology Officer	Digital Bank	14	AI infrastructure and financial automation
P6	FinTech Executive	Product Manager	Mobile Banking	10	AI-powered customer engagement
P7	FinTech Executive	Head of Innovation	FinTech Company	12	Intelligent financial services
P8	FinTech Executive	Operations Manager	Digital Payments	9	AI-enabled operational optimization
P9	Investor	Venture Capital Partner	Venture Capital Firm	15	AI startup investment evaluation
P10	Investor	Angel Investor	Private Investment	11	FinTech venture financing
P11	Investor	Investment Manager	Investment Fund	13	AI-assisted portfolio assessment
P12	Investor	Financial Advisor	Wealth Management	10	Digital investment technologies
P13	Consumer	Digital Banking User	Retail Customer	6	AI-powered banking applications
P14	Consumer	Mobile Wallet User	Retail Customer	5	Personalized financial recommendations
P15	Consumer	Online Investor	Retail Investment	7	Robo-advisory platforms
P16	Consumer	SME Owner	Small Business	9	AI-enabled payment and financing services
P17	Consumer	Freelancer	Digital Economy	4	Mobile financial applications
P18	Consumer	University Professional	Education	8	AI-assisted personal financial management

The participant profile demonstrates a balanced representation of the principal stakeholders involved in Pakistan's entrepreneurial and FinTech ecosystem. The diversity in professional roles, industry exposure, and experience with AI-enabled financial technologies enriched the data by incorporating multiple perspectives on Human–AI co-entrepreneurship, thereby strengthening the credibility, transferability, and overall trustworthiness of the study's findings.

Findings and Discussion

Introduction to Findings

The interview data were analyzed using reflexive thematic analysis following the procedures recommended by Braun and Clarke (2019, 2021) and Terry et al. (2017). The iterative coding process generated numerous initial codes that were subsequently refined into categories and broader themes through repeated comparison and interpretation of participants' narratives. Across all stakeholder groups, participants consistently described Agentic AI as more than an automation technology. Instead, they perceived it as an intelligent collaborator capable of supporting entrepreneurial decision-making, enhancing financial innovation, strengthening customer relationships, and improving organizational performance. Nevertheless, participants also emphasized that autonomous AI should complement rather than replace human judgment, particularly in strategic and ethically sensitive financial decisions.

Five overarching themes emerged from the analysis: (1) Collaborative Entrepreneurial Decision-Making, (2) AI-Enabled Financial Innovation, (3) Personalized Consumer Engagement, (4) Trust and Ethical Governance, and (5) The Evolving Future of Human–AI Co-Entrepreneurship. The first three themes are presented below, while the remaining themes are discussed in the subsequent section.

Theme 1: Collaborative Entrepreneurial Decision-Making

The first theme demonstrates that participants overwhelmingly perceived Agentic AI as a strategic entrepreneurial collaborator rather than a substitute for human entrepreneurs. Entrepreneurs explained that AI-assisted systems improved the speed, accuracy, and quality of strategic decisions

by analyzing large datasets, identifying emerging market opportunities, forecasting financial outcomes, and evaluating business risks. However, participants emphasized that final entrepreneurial decisions should remain under human control because strategic vision, intuition, creativity, and ethical judgment cannot be fully replicated by autonomous AI.

One entrepreneur (P2) explained:

"Agentic AI gives us several possible business directions within minutes, but deciding which opportunity aligns with our long-term vision is still a human responsibility."

Similarly, an investor (P10) noted:

"AI has become our first analyst rather than our final decision-maker. It identifies opportunities that humans may overlook, but investment decisions still require human judgment."

FinTech executives highlighted that Human–AI collaboration enables organizations to respond more effectively to rapidly changing financial markets. Instead of replacing employees, intelligent AI agents automate repetitive analytical tasks, allowing professionals to concentrate on innovation, relationship management, and strategic planning.

Consumers also recognized this collaborative relationship. Although they appreciated AI-generated financial recommendations, they expressed greater confidence when important financial decisions were validated by human experts.

Overall, this theme illustrates that participants viewed Human–AI co-entrepreneurship as a complementary partnership in which AI contributes computational intelligence while humans provide contextual understanding, creativity, and ethical reasoning.

Theme 2: AI-Enabled Financial Innovation

The second theme illustrates the transformative role of Agentic AI in accelerating financial innovation across Pakistan's FinTech ecosystem. Participants consistently emphasized that autonomous AI agents improve organizational efficiency by automating complex financial processes, strengthening predictive analytics, reducing operational costs, and facilitating faster business innovation.

Entrepreneurs described AI as an innovation catalyst capable of evaluating multiple business scenarios simultaneously. Rather than relying solely on historical experience, AI continuously monitors customer behavior, financial trends, and market dynamics to recommend innovative business strategies.

Participant P4 stated:

"AI doesn't simply automate our work—it constantly generates new possibilities for improving products, identifying customer needs, and expanding into untapped markets."

FinTech executives similarly emphasized AI's contribution to intelligent financial services. According to participant P7:

"Autonomous AI has transformed product development. We now launch customer-centered financial solutions much faster because AI continuously analyzes user feedback and predicts market demand."

Investors believed that Agentic AI significantly improves investment quality through intelligent risk assessment and financial forecasting. Instead of manually reviewing extensive financial reports, investors increasingly rely on AI-generated insights to evaluate startups, identify growth opportunities, and monitor portfolio performance.

Participant P11 observed:

"The quality of investment decisions has improved because AI continuously evaluates financial indicators that humans cannot process efficiently."

Consumers also acknowledged noticeable improvements in service efficiency, particularly regarding faster loan approvals, personalized financial products, and intelligent customer support. Many participants viewed these innovations as increasing convenience while reducing waiting times and administrative complexity.

Collectively, the findings indicate that Agentic AI is not merely automating existing financial activities but fundamentally transforming innovation processes by enabling organizations to develop more adaptive, efficient, and customer-oriented financial services.

Theme 3: Personalized Consumer Engagement

The third theme demonstrates that Agentic AI has substantially transformed consumer engagement by delivering personalized, proactive, and context-aware financial experiences. Across all stakeholder groups, participants emphasized that AI-powered personalization strengthens customer relationships by understanding individual financial behaviors, preferences, and future needs.

Consumers consistently reported that AI-generated recommendations improved their financial confidence because suggested products were tailored to their spending patterns and financial objectives rather than generic marketing campaigns.

Participant P15 commented:

"Previously every customer received the same financial offers. Now AI understands my spending habits and recommends products that genuinely match my needs."

Similarly, participant P13 stated:

"The AI assistant remembers my previous transactions and immediately suggests solutions whenever I need financial advice."

Entrepreneurs regarded personalization as a major source of competitive advantage. AI enables businesses to develop customized financial products, improve customer retention, and strengthen long-term relationships by continuously learning from consumer interactions.

According to participant P3:

"Instead of selling products, AI helps us understand customers before they even express their needs."

FinTech executives also explained that intelligent customer engagement extends beyond marketing personalization. Agentic AI continuously monitors customer journeys, predicts service expectations, detects dissatisfaction, and proactively recommends interventions before customer complaints emerge.

Investor participants similarly believed that organizations capable of delivering intelligent personalized experiences are likely to achieve stronger customer loyalty and long-term profitability because personalized engagement

increases customer trust and service value.

Nevertheless, several consumers cautioned that personalization should remain transparent and privacy-conscious. Participants emphasized that personalized financial services must balance convenience with responsible data management to

maintain consumer confidence.

Overall, the findings suggest that Agentic AI enhances consumer engagement by transforming customer relationships from reactive service delivery toward continuous, personalized, and intelligent financial interaction.

Table 2: Thematic Analysis of Findings

Theme	Categories	Representative Initial Codes	Participant Quotations	Interpretation
Theme 1: Collaborative Entrepreneurial Decision-Making	Human–AI collaboration; Strategic decision support; Complementary intelligence	AI-assisted planning; Opportunity recognition; Risk analysis; Strategic recommendations; Human oversight; Entrepreneurial intuition	"AI gives us options, but entrepreneurs make the final strategic decisions." (P2); "AI is our first analyst, not our final decision-maker." (P10)	Agentic AI functions as an intelligent strategic collaborator that complements human creativity and entrepreneurial judgment rather than replacing it.
	Business innovation; Financial intelligence; Investment optimization; Operational efficiency	Predictive analytics; Automated financial analysis; Product innovation; Intelligent lending; Market forecasting; Process automation	"AI constantly generates new opportunities for business innovation." (P4); "Investment decisions are now supported by continuous AI analysis." (P11)	Agentic AI accelerates financial innovation by improving decision quality, operational efficiency, investment evaluation, and adaptive product development.
Theme 3: Personalized Consumer Engagement	Customer personalization; Intelligent financial advice; Customer experience; Relationship management	Personalized recommendations; Behavioral analysis; Digital financial advisor; Customer satisfaction; Loyalty; Predictive engagement	"AI understands my financial behavior better than traditional banking." (P15); "It recommends solutions before I even search for them." (P13)	Personalized AI-driven engagement enhances customer satisfaction, strengthens trust, improves financial experiences, and creates long-term customer relationships.
Theme 4: Trust and Ethical Governance	Transparency; Privacy; Accountability; Human control	Data privacy; Explainable AI; Ethical responsibility; Bias reduction; Regulatory compliance; Human monitoring	"Customers will only trust AI if they understand how decisions are made." (P8); "Privacy must never be sacrificed for automation." (P16)	Sustainable Human–AI collaboration requires transparent governance, explainable algorithms, ethical oversight, and robust privacy protection.

Theme	Categories	Representative Initial Codes	Participant Quotations	Interpretation
Theme 5: The Evolving Future of Human–AI Co-Entrepreneurship	AI as business partner; Future entrepreneurship; Collaborative ecosystems	Digital co-founder; Continuous learning; Autonomous collaboration; Sustainable innovation; Entrepreneurial transformation	<i>"Future startups will be built by entrepreneurs working alongside AI." (P5); "AI will become every entrepreneur's strategic business partner." (P1)</i>	Participants envision a future in which Human–AI co-entrepreneurship becomes the dominant model for innovation, entrepreneurial finance, and sustainable value creation within FinTech ecosystems.

The thematic analysis demonstrates that stakeholders consistently viewed Agentic AI as a collaborative and strategic partner capable of enhancing entrepreneurial decision-making, stimulating financial innovation, and delivering highly personalized consumer experiences. At the same time, participants recognized that the long-term success of Human–AI co-entrepreneurship depends on maintaining ethical governance, transparency, and meaningful human oversight—issues explored further in the next section.

Theme 4: Trust and Ethical Governance

The fourth theme highlights that trust, transparency, and ethical governance constitute the foundation of successful Human–AI co-entrepreneurship within the FinTech ecosystem. Although participants acknowledged the substantial benefits of Agentic AI in entrepreneurial finance and customer engagement, they consistently emphasized that these advantages could only be sustained if autonomous AI systems operate in a transparent, accountable, and ethically responsible manner. Across all stakeholder groups, trust emerged as a prerequisite for the widespread adoption of AI-enabled financial services.

Entrepreneurs explained that while Agentic AI improves business efficiency and strategic decision-making, complete reliance on autonomous systems could expose organizations to ethical and operational risks. Participants argued that AI-generated recommendations should remain subject to human review, particularly when financial decisions have significant legal, social, or economic

consequences.

Participant P1 stated:

"AI can recommend the best financial strategy based on data, but entrepreneurs must still evaluate whether the recommendation aligns with business values, customer expectations, and ethical responsibilities."

Similarly, participant P4 emphasized:

"Business leaders cannot simply accept every AI recommendation. Human judgment remains essential because AI cannot fully understand social, cultural, or ethical complexities."

FinTech executives viewed transparency as equally important for maintaining customer confidence. Several participants noted that consumers increasingly question how AI systems generate financial recommendations, credit scores, or investment advice. Consequently, organizations should develop explainable AI systems that allow customers to understand the reasoning behind automated decisions.

Participant P8 explained:

"Customers trust financial institutions when they know how decisions are made. If AI behaves like a black box, people become hesitant regardless of how accurate the system is."

Investors also emphasized governance and accountability as critical determinants of sustainable AI adoption. They argued that autonomous AI should complement organizational governance rather than operate independently without oversight.

Participant P10 remarked:

"Good governance means AI supports investment decisions, but accountability always remains with human decision-makers."

Consumer participants focused primarily on issues of privacy and data security. Although they appreciated personalized financial services, many expressed concerns regarding excessive data collection, unauthorized information sharing, and algorithmic bias. Participants believed that organizations should clearly communicate how customer data are collected, stored, analyzed, and protected.

Participant P16 observed:

"Personalized banking is useful, but I want complete transparency about how my financial data are being used."

Likewise, participant P13 stated:

"If customers feel their personal information is unsafe, they will stop trusting AI regardless of its benefits."

Overall, the findings indicate that stakeholders perceive trust not as an automatic consequence of technological advancement but as an outcome of responsible governance, transparency, explainability, and continued human oversight. Participants consistently argued that ethical governance enhances both organizational legitimacy and long-term consumer confidence, thereby enabling sustainable Human–AI collaboration.

Theme 5: The Evolving Future of Human–AI Co-Entrepreneurship

The fifth theme captures participants' expectations regarding the future role of Agentic AI within entrepreneurial ecosystems. Across all stakeholder groups, respondents believed that Human–AI collaboration will become increasingly integrated into entrepreneurial finance, business innovation, customer relationship management, and strategic decision-making. Rather than replacing entrepreneurs, participants envisioned AI evolving into a long-term strategic business partner capable of continuously learning, adapting, and supporting organizational growth.

Entrepreneurs anticipated that future ventures

would increasingly be established through collaborative intelligence, where founders and AI agents jointly perform opportunity recognition, market analysis, financial forecasting, product development, and customer engagement.

Participant P2 stated:

"The future entrepreneur will never work alone. Every startup will have an AI partner assisting with decisions from idea generation to business expansion."

Participant P3 similarly commented:

"Human creativity will remain the driving force, but AI will become the entrepreneur's permanent strategic advisor."

FinTech executives predicted that autonomous AI agents would significantly reshape financial institutions by creating intelligent ecosystems capable of continuously adapting to changing customer needs and market conditions.

Participant P5 explained:

"Future financial institutions will not simply digitize existing services. They will continuously evolve through AI-driven learning and autonomous innovation."

Investor participants believed that Agentic AI would fundamentally transform entrepreneurial finance by improving investment transparency, identifying high-potential ventures, and reducing uncertainty within financial markets.

Participant P12 observed:

"AI will never replace investors, but it will dramatically improve the quality, speed, and confidence of investment decisions."

Consumer participants also expressed optimism regarding future financial services. Many anticipated that AI assistants would become proactive financial advisors capable of supporting budgeting, investment planning, savings management, and long-term financial wellbeing.

Participant P18 remarked:

"In the future, AI will understand my financial goals better than I understand them myself and help me make smarter financial decisions."

Despite this optimism, participants consistently emphasized that future Human–AI co-

entrepreneurship should remain human-centered. Respondents rejected the idea of fully autonomous entrepreneurship, arguing instead that AI should enhance rather than replace human creativity, empathy, ethical reasoning, and leadership.

Consequently, participants envisioned the future of entrepreneurship as a collaborative ecosystem where intelligent technologies augment human capabilities while entrepreneurs retain strategic authority, social responsibility, and accountability.

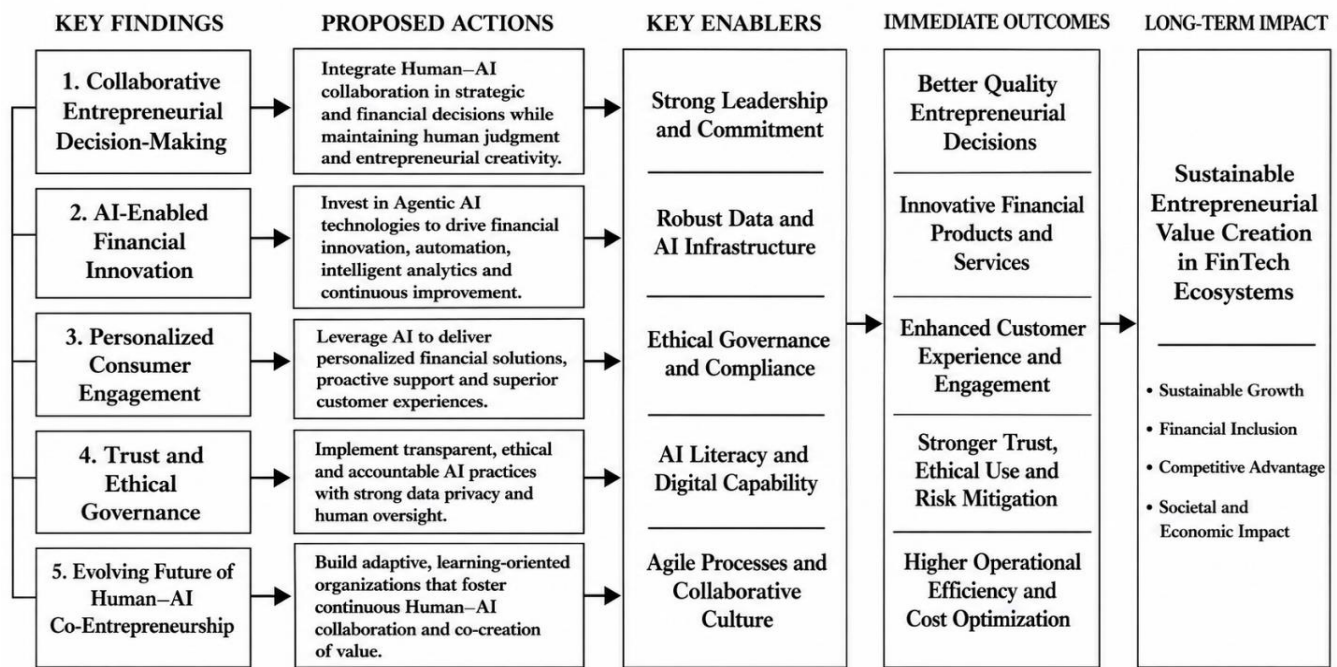
Synthesis of Findings

The findings collectively demonstrate that Human–AI co-entrepreneurship represents a fundamental transformation in entrepreneurial finance and digital financial services. Across all stakeholder groups, participants consistently perceived Agentic AI as an intelligent collaborator capable of enhancing entrepreneurial decision-making, accelerating financial innovation, improving consumer engagement, and strengthening organizational competitiveness. Rather than viewing AI as a replacement for human entrepreneurs, respondents described a complementary relationship in which human creativity, intuition, ethical reasoning, and contextual understanding are enhanced by AI's computational intelligence, predictive analytics, and autonomous learning capabilities.

The five themes reveal a sequential and interconnected process of value creation.

Collaborative entrepreneurial decision-making provides the strategic foundation by combining human judgment with AI-generated intelligence. This collaboration stimulates AI-enabled financial innovation, allowing organizations to improve operational efficiency, develop innovative financial products, and optimize investment decisions. These innovations subsequently strengthen personalized consumer engagement through adaptive financial services tailored to individual customer needs. However, participants emphasized that these benefits can only be sustained through trust and ethical governance, where transparency, accountability, privacy protection, and explainable AI foster stakeholder confidence. Finally, participants envisioned the evolving future of Human–AI co-entrepreneurship as a collaborative ecosystem in which autonomous AI serves as a strategic business partner while humans continue to provide ethical leadership and long-term strategic direction.

Taken together, these findings suggest that sustainable entrepreneurial success in the FinTech sector depends not merely on technological sophistication but on achieving an appropriate balance between autonomous intelligence and human agency. Human–AI co-entrepreneurship therefore emerges as a dynamic capability that integrates innovation, responsible governance, and customer-centered value creation within increasingly intelligent financial ecosystems.

Figure 1: *Proposed Framework for Implementing Human–AI Co-Entrepreneurship in FinTech Ecosystems*

Discussion

The findings extend the emerging literature on Agentic AI by providing empirical evidence that autonomous AI is increasingly perceived as a collaborative entrepreneurial partner rather than a simple automation technology. This finding supports the conceptual arguments of Al-Bashrawi et al. (2026), who proposed that AI systems are evolving toward co-agency, where humans and intelligent agents jointly contribute to entrepreneurial innovation. Participants consistently emphasized that AI enhances rather than replaces entrepreneurial capabilities, reinforcing Jeremiah's (2025) proposition that future entrepreneurship will depend upon collaborative intelligence instead of technological substitution. Likewise, the findings align with Rezazadeh and Bonehgazy (2025), who introduced the concept of digital co-founders capable of supporting entrepreneurial activities throughout venture development.

The findings further demonstrate that Agentic AI significantly enhances entrepreneurial finance by improving strategic planning, investment evaluation, financial forecasting, and innovation. These results corroborate Hornuf and Mattusch (2025), who argued that AI fundamentally transforms entrepreneurial finance through intelligent decision support. Similarly, participants' views regarding AI-enabled

investment analysis and financial innovation correspond with Gong (2026) and Naseer et al. (2026), who identified autonomous AI agents as key drivers of intelligent financial ecosystems and decentralized financial services.

Regarding consumer engagement, the findings reinforce previous studies demonstrating that AI-driven personalization strengthens customer experience, financial confidence, and service quality. Participants' experiences closely mirror those reported by Hentzen et al. (2022), Inala and Somu (2024), and Tang and Son (2026), all of whom highlighted the growing importance of personalized AI advisors in financial services. However, the present study extends these contributions by showing that personalization is valued only when accompanied by transparency and meaningful human oversight.

The findings also emphasize that ethical governance remains central to successful Human–AI collaboration. Participants consistently associated trust with explainability, privacy protection, accountability, and responsible decision-making, supporting the human-centered AI perspectives advanced by Kismawadi (2025), Inala and Somu (2025), and Bhat and Krishnan (2025). Unlike technology-centric studies that primarily emphasize AI capabilities, this research demonstrates that stakeholder acceptance depends equally on governance mechanisms that preserve

ethical responsibility while enabling innovation.

Finally, the study contributes important evidence from Pakistan's rapidly developing FinTech ecosystem, addressing a significant contextual gap within the existing literature. Previous studies have documented the expansion of digital entrepreneurship and FinTech adoption in Pakistan (Arzu et al., 2025; Ashraf et al., 2025), yet little empirical research has examined how diverse stakeholders perceive Agentic AI within this context. By integrating the perspectives of entrepreneurs, investors, FinTech executives, and consumers, this study advances a comprehensive understanding of Human–AI co-entrepreneurship and demonstrates that sustainable value creation emerges through the complementary integration of technological intelligence, human expertise, ethical governance, and customer-centered innovation. This multi-stakeholder perspective enriches the growing scholarship on Agentic AI while providing practical insights for entrepreneurs, financial institutions, policymakers, and technology developers seeking to build trustworthy and innovative AI-enabled financial ecosystems.

Conclusion

The rapid advancement of Agentic Artificial Intelligence has fundamentally transformed the entrepreneurial landscape by redefining how entrepreneurs, financial institutions, investors, and consumers interact within modern FinTech ecosystems. Unlike earlier generations of artificial intelligence that primarily automated routine processes, Agentic AI introduces autonomous reasoning, adaptive learning, and collaborative decision-making capabilities that enable intelligent systems to function as strategic partners rather than passive technological tools. This study explored these developments through a multi-stakeholder qualitative investigation involving entrepreneurs, FinTech executives, investors, and consumers within Pakistan's evolving digital financial ecosystem.

The findings demonstrate that Human–AI co-entrepreneurship is increasingly perceived as a collaborative partnership where human creativity, ethical judgment, and strategic vision complement the analytical intelligence, predictive capabilities, and autonomous learning of Agentic AI. Participants consistently viewed AI as an enabler

of entrepreneurial finance, financial innovation, and personalized consumer engagement rather than a replacement for human decision-makers. The study identified five interconnected themes that collectively explain this evolving relationship: collaborative entrepreneurial decision-making, AI-enabled financial innovation, personalized consumer engagement, trust and ethical governance, and the future evolution of Human–AI co-entrepreneurship.

The findings further reveal that while Agentic AI offers significant opportunities to improve business performance, accelerate innovation, strengthen investment decisions, and enhance customer experiences, its long-term success depends on establishing transparent governance mechanisms, ethical accountability, data privacy, and meaningful human oversight. Participants emphasized that entrepreneurial success within AI-enabled financial ecosystems will increasingly depend upon balancing technological intelligence with human values, responsible leadership, and organizational trust. Consequently, Human–AI co-entrepreneurship should be understood not as technological substitution but as collaborative intelligence that integrates the complementary strengths of humans and autonomous AI agents. This perspective provides a comprehensive understanding of how emerging AI technologies can contribute to sustainable innovation, responsible financial services, and long-term value creation within entrepreneurial ecosystems.

Theoretical Implications

This study makes several important theoretical contributions to the emerging literature on Agentic AI, entrepreneurship, and FinTech. First, it extends the concept of Human–AI co-agency by providing empirical evidence that autonomous AI functions as a collaborative entrepreneurial actor rather than merely a decision-support technology. While previous studies have primarily conceptualized co-agency from theoretical perspectives, this research demonstrates how entrepreneurs, investors, FinTech executives, and consumers collectively perceive Human–AI collaboration in real-world entrepreneurial finance and digital financial services.

Second, the study contributes to entrepreneurial finance literature by integrating Agentic AI into entrepreneurial decision-making processes.

Existing research has largely focused on AI adoption, predictive analytics, or financial automation independently, whereas this study illustrates how autonomous AI simultaneously influences opportunity recognition, investment evaluation, financial planning, business innovation, and customer engagement. This integrated perspective advances a more comprehensive understanding of AI-enabled entrepreneurship and broadens the theoretical boundaries of entrepreneurial finance.

Third, the study bridges three traditionally separate research domains—entrepreneurship, FinTech innovation, and consumer engagement—within a unified conceptual framework. By demonstrating how these dimensions interact through Human–AI collaboration, the findings provide a holistic explanation of value creation within intelligent financial ecosystems. Furthermore, the multi-stakeholder perspective enriches existing qualitative research by incorporating diverse viewpoints that have largely been overlooked in previous studies, particularly within emerging economies. Finally, the study contributes context-specific evidence from Pakistan, extending the geographical scope of Agentic AI research beyond the predominantly developed-country settings that dominate the current literature.

Practical Recommendations

The findings offer several practical implications for entrepreneurs, FinTech firms, investors, policymakers, and technology developers. Entrepreneurs should view Agentic AI as a strategic collaborator capable of enhancing opportunity recognition, financial planning, market intelligence, and business innovation rather than merely as an operational automation tool. Organizations should invest in AI literacy and employee capability development to facilitate effective Human–AI collaboration while ensuring that strategic and ethical decisions remain under human supervision.

FinTech companies should prioritize the development of human-centered and explainable AI systems that provide transparent recommendations, improve customer understanding, and strengthen trust in autonomous financial services. Incorporating explainability into AI-driven decision-making can

increase consumer confidence while reducing concerns regarding algorithmic bias and opaque financial processes. Similarly, investors can leverage Agentic AI to improve due diligence, portfolio management, and startup evaluation; however, AI-generated insights should complement rather than replace professional investment judgment.

For policymakers and financial regulators, the findings underscore the need to establish comprehensive governance frameworks that promote responsible AI adoption while protecting consumer rights. Regulatory policies should emphasize transparency, accountability, cybersecurity, data privacy, and ethical AI standards to ensure that technological innovation remains aligned with societal expectations and public trust. Educational institutions and entrepreneurial support organizations should also develop specialized training programs that equip entrepreneurs with the knowledge and competencies required to collaborate effectively with autonomous AI systems. Such initiatives will facilitate the responsible integration of Agentic AI into entrepreneurial ecosystems while maximizing its contribution to sustainable economic growth and financial inclusion.

Limitations and Future Research Directions

Despite its contributions, this study has several limitations that should be acknowledged. First, the research adopted a qualitative exploratory design involving 18 participants, which provides rich contextual insights but limits the generalizability of the findings to broader populations. Future studies should employ larger quantitative or mixed-methods designs to validate the conceptual relationships identified in this research.

Second, the study focused exclusively on stakeholders within Pakistan's FinTech ecosystem. Although this context offers valuable insights into AI adoption within an emerging economy, entrepreneurial environments differ considerably across countries due to variations in institutional infrastructure, technological maturity, regulatory frameworks, and cultural characteristics. Comparative cross-country studies involving developed and developing economies would therefore enhance the external validity of the proposed conceptual framework.

Third, the study adopted a cross-sectional research design, capturing stakeholder perceptions at a single point in time. Given the rapid evolution of Agentic AI technologies, future longitudinal studies should examine how Human–AI co-entrepreneurship develops as organizations accumulate experience with increasingly autonomous AI systems. Longitudinal evidence would provide a deeper understanding of the dynamic relationships between AI adoption, entrepreneurial innovation, organizational performance, and consumer engagement.

Future research may also investigate sector-specific applications of Human–AI co-entrepreneurship across industries such as healthcare, manufacturing, education, logistics, agriculture, and Islamic finance. Additional studies could examine moderating factors including organizational culture, digital

capability, entrepreneurial orientation, technology readiness, regulatory support, and AI literacy to better explain differences in Human–AI collaboration outcomes. Finally, quantitative studies may develop and empirically validate measurement scales for Human–AI co-entrepreneurship, collaborative intelligence, AI trust, and entrepreneurial value creation, thereby advancing theoretical development within this rapidly emerging field.

Overall, this study establishes a strong foundation for future investigations into Agentic AI and demonstrates that the future of entrepreneurship will likely be characterized not by competition between humans and intelligent machines, but by collaborative partnerships that combine human ingenuity with autonomous artificial intelligence to create more innovative, ethical, and sustainable entrepreneurial ecosystems.

Conflict of Interest

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