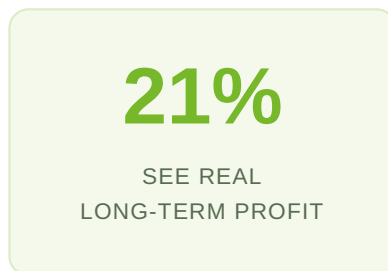
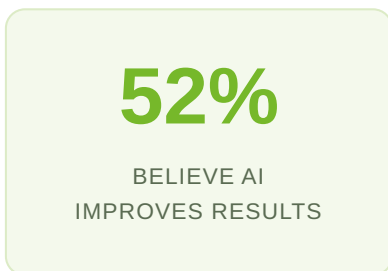
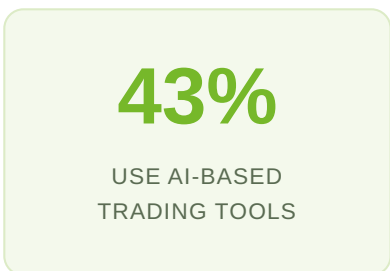


TRADING SOFTWARE · BEHAVIORAL STUDY

# AI Bots vs Human Decisions in Binary Options

A proprietary study of 1,200 retail traders examining how Telegram bots, AI-generated signals and automated alerts shape decision-making, frequency and losses in binary options trading.



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## 01 Executive Findings

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TU research shows that AI-generated signals and Telegram trading bots significantly influence binary options behavior. While most users believe automation improves results, only one in five reports real long-term profit improvement — and behavioral side effects are widespread.

✓ **AI-driven trading is mainstream.** 43% of binary traders regularly use Telegram bots, AI signals or automated alerts.

✓ **Automation increases trading frequency.** Nearly 39% placed more trades after subscribing to signal bots or AI systems.

✓ **Speed often replaces analysis.** **31%** entered trades immediately after a notification, with no additional analysis.

✓ **Losses remain significant among bot users.** **34%** of AI-signal users reported increased losses linked to impulsive or excessive trading.

✓ **Short-expiration traders are most affected.** Users of 60-second and 5-minute options showed the highest dependence on AI prompts (**58%** and **49%**).

✓ **Beginners rely on automation more heavily.** Traders with under one year of experience were nearly 2.5× more likely to trust Telegram bots than experienced users.

✓ **Push notifications amplify emotional behavior.** Real-time alerts and countdown timers increase urgency and reduce decision quality.

**Risk warning:** Binary options trading involves substantial risk of loss. AI-generated signals do not guarantee profitability. This research is informational only.

## 02 Introduction & Research Questions

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The rapid growth of AI-powered trading tools has transformed the binary options ecosystem. Telegram bots, AI-generated signals, Discord channels and automated alert systems now influence how retail traders discover setups, execute positions and manage risk. For many users, trading decisions are increasingly triggered not by independent analysis, but by notifications, algorithmic prompts and simplified buy/sell recommendations.

Regulators and institutional organizations have already identified growing concerns around automated retail trading behavior. IOSCO, ESMA, FCA UK, the SEC, BIS and OECD have all published research or warnings related to digital trading environments, algorithmic recommendations, impulsive speculation and the risks associated with automated financial decision-making.

### The study focuses on six key questions

- How widespread is the use of AI signals and bots among binary options traders?
- How do AI tools influence trader behavior and trading activity?
- How does trading experience affect trust in AI bots and automated signals?
- Does the expiration type influence traders' dependence on AI-generated signals?

- Do AI signals improve real long-term trading performance?
- Do AI systems contribute to overtrading?

## 03 Glossary

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### Binary option

A short-term contract with a fixed payout if the underlying asset moves above or below a target price at expiration.

### AI-generated signal

A trading recommendation produced by an algorithm or machine-learning system, typically delivered as a simplified buy/sell prompt.

### Telegram signal bot

An automated channel or bot that distributes trading recommendations to subscribers, often in real time.

### Push notification

A real-time alert delivered to a mobile or desktop device, designed to trigger an immediate user response.

### Impulsive execution

Opening a trade with limited verification, typically driven by emotional response to a signal or notification.

### Overtrading

Excessive transaction frequency that exceeds a trader's strategy or risk capacity, often driven by automation and gamification.

### CAWI

Computer-Assisted Web Interviewing — an online survey methodology used for standardized data collection.

## 04 Institutional Validation

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Institutional evidence strongly supports the relevance of this topic.

**IOSCO** has repeatedly warned that algorithmic content distribution, social trading systems and unregulated financial promotion channels can influence retail investors without adequate transparency or accountability. The **UK FCA** has issued several warnings regarding Telegram signal groups and unauthorized investment communities providing trading recommendations without regulatory approval. In 2025, the FCA also expanded enforcement actions against online financial promotion networks targeting retail traders through automated alerts and social platforms.

**ESMA** research highlights that speculative retail trading products may expose investors to impulsive behavior amplified by gamification techniques, digital engagement practices and social-media-driven trading environments. The **SEC** has warned that retail traders may overestimate the predictive capabilities

of AI-driven investment tools and misunderstand the limitations of automated recommendations, particularly when technologies optimize or influence investor behavior.

The **BIS** has identified increasing retail participation in highly speculative trading environments driven by mobile-first platforms, social media ecosystems and frictionless execution systems. According to BIS findings, simplified trading experiences can encourage excessive risk-taking behavior among inexperienced users. **OECD** research on digital financial literacy suggests users often struggle to safely navigate fast-moving digital financial environments — including distinguishing between educational content, financial promotions and potentially misleading online financial services.

### Key institutional takeaways

<p style="text-align: center; font-size: 24px; font-weight: bold; color: #c00000;">Gaps</p> <p style="text-align: center; font-size: 12px; color: #444;">unregulated signal groups lack transparency (IOSCO)</p>	<p style="text-align: center; font-size: 24px; font-weight: bold; color: #c00000;">Gamification</p> <p style="text-align: center; font-size: 12px; color: #444;">amplifies impulsive retail behavior (ESMA)</p>	<p style="text-align: center; font-size: 24px; font-weight: bold; color: #c00000;">Overconfidence</p> <p style="text-align: center; font-size: 12px; color: #444;">in AI predictive power (SEC, BIS)</p>
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## 05 Theoretical Framework

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From a behavioral perspective, AI-generated trading signals may increase impulsive trading because they reduce cognitive friction. Traders no longer need to independently search for setups, interpret charts or validate market conditions. Instead, signals arrive as simplified action prompts: buy, sell, up or down. This creates an important behavioral asymmetry — automation increases convenience and execution speed but may simultaneously reduce analytical engagement and personal responsibility for risk management.

HYPOTHESIS	MECHANISM
Push-based signal delivery amplifies emotional decision-making	Countdown timers and instant notifications create urgency that competes with rational analysis
Beginners rely on AI signals more heavily	Less experienced users perceive automation as expertise — simpler and more trustworthy than analysis
Lower friction increases overtrading	Higher accessibility and notification volume increase transaction frequency disconnected from strategy

These three hypotheses are particularly relevant in binary options trading, where expirations can last less than a minute — and where automated notifications may encourage repetitive execution patterns disconnected from disciplined strategy management.

To evaluate how AI-generated signals and trading bots influence binary options behavior, TU conducted a proprietary CAWI study focused on automation usage, emotional trading patterns and execution behavior. Unlike most institutional studies, TU's research distinguishes between passive exposure to trading signals and direct behavioral impact — including impulsive execution, emotional trading and changes in trading frequency.

<b>1,200</b> RETAIL TRADERS	<b>Global</b> MULTI-MARKET SAMPLE
<b>18+</b> AGE RANGE	<b>95%</b> CONFIDENCE
<b>±3.0%</b> MARGIN OF ERROR	<b>CAWI</b> SURVEY METHOD

**Eligibility:** respondents who traded binary options or short-term speculative instruments within the last 12 months. Participants were selected based on active trading behavior and experience with digital trading tools including Telegram channels, Discord groups, AI-generated signals and mobile trading notifications.

### Research team

- Anastasiia Chabaniuk** · Author  
Research design and interpretation
- Chinmay Soni** · Fact-checker  
Data validation & statistical verification
- Dan Blystone** · Editor-in-Chief  
Editorial & methodological supervision
- A. Mastykin** · **O. Tkachenko** · TU Research  
Data collection and analysis

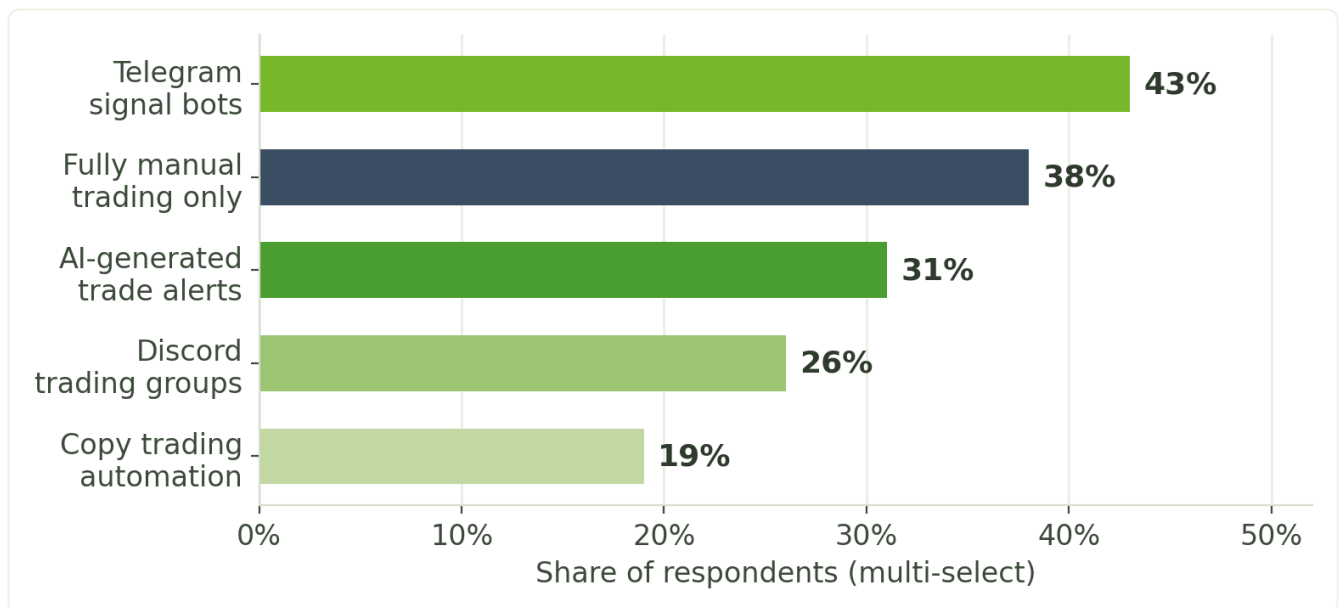
**Note.** This research design is based on validated institutional findings, but the proprietary CAWI module is used to confirm, nuance or challenge those patterns within TU's target audience rather than assume universal applicability.

## 07 Survey Results

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### AI signal adoption

To determine how widespread AI-generated trading systems have become, we analyzed adoption rates among active binary traders. Multiple tools can be used simultaneously.



Use of AI-based trading tools (multi-select)

#### INSIGHT

AI-assisted trading tools are now deeply integrated into binary trading behavior, especially among younger retail users. Telegram bots lead adoption, but a meaningful share (38%) still trades fully manually — indicating a split market rather than full automation.

### Behavioral impact

To measure the behavioral consequences of AI-generated trading signals, we analyzed execution patterns.



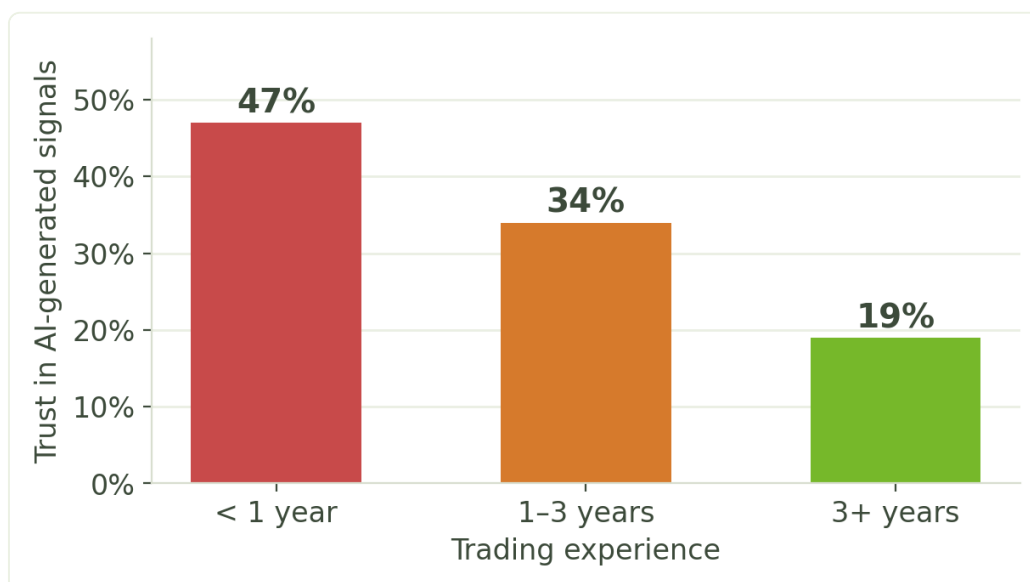
*Behaviors most strongly influenced by AI trading bots*

**INSIGHT**

The findings suggest automation increases market activity, but also significantly raises impulsive execution risk. The combination of speed (42% execute within 5 min) and reduced analysis (31% impulsive entries) is structurally tied to higher loss rates.

**Experience factor**

To evaluate vulnerability across user segments, we segmented traders by experience level.



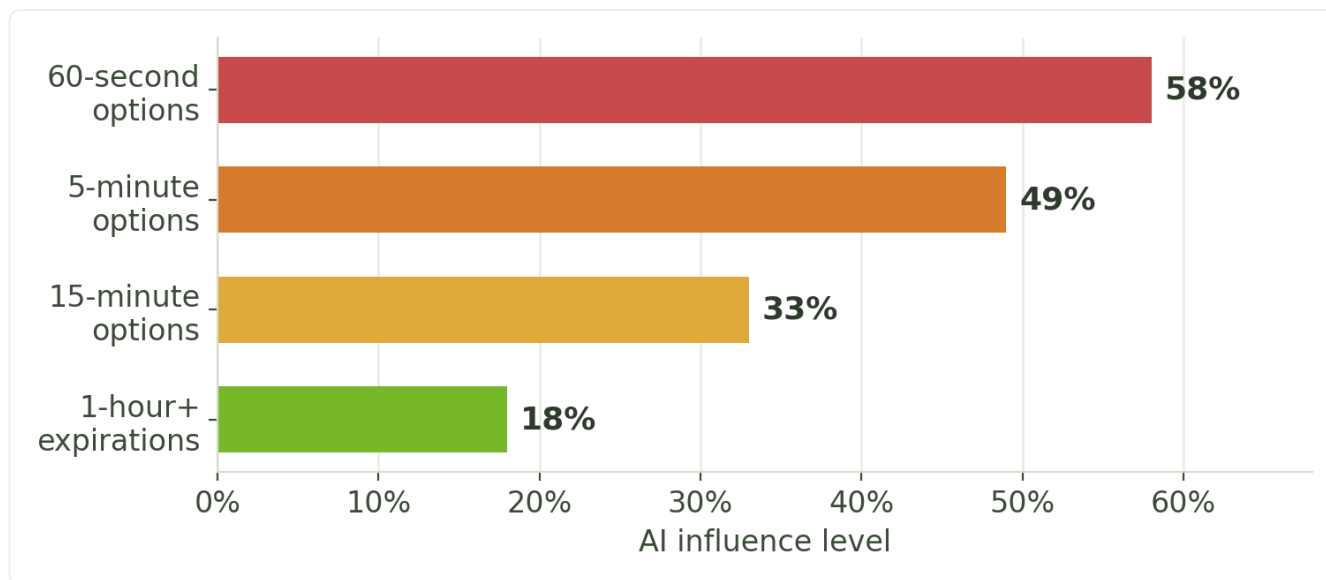
*Trust in AI-generated signals by trading experience*

**INSIGHT**

Less experienced traders rely significantly more on AI-generated signals — trust drops from 47% (under 1 year) to 19% (3+ years), a 2.5× difference. This supports institutional concerns around financial literacy and automation dependency among newcomers.

### Expiration impact

To assess whether product structure affects AI influence, we compared binary expiration preferences.



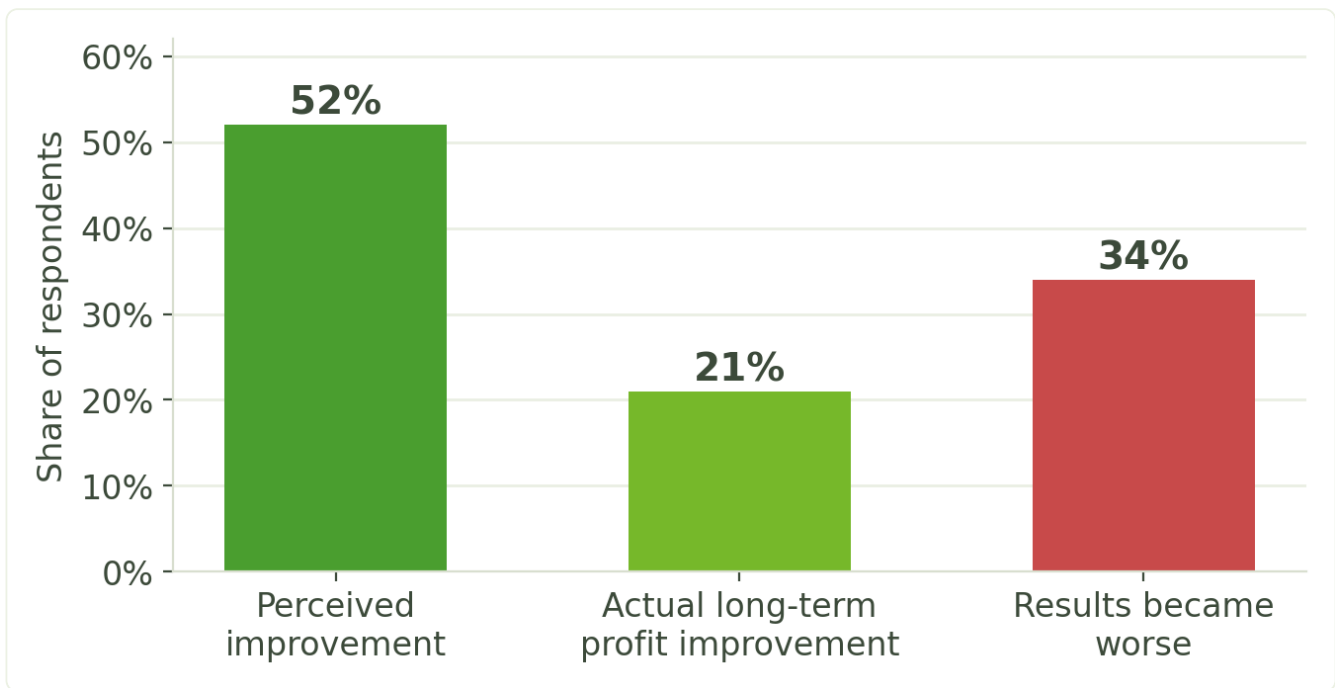
*AI influence level by binary option expiration type*

**INSIGHT**

The shorter the expiration window, the stronger the influence of automated signals and emotional execution. 60-second traders are over 3× more dependent on AI prompts than 1-hour+ traders — confirming that fast-cycle products amplify the behavioral effects of automation.

### Perceived profitability vs reality

To evaluate the gap between expectations and actual trading outcomes, we analyzed how binary traders perceive AI-generated signals compared to their real results.



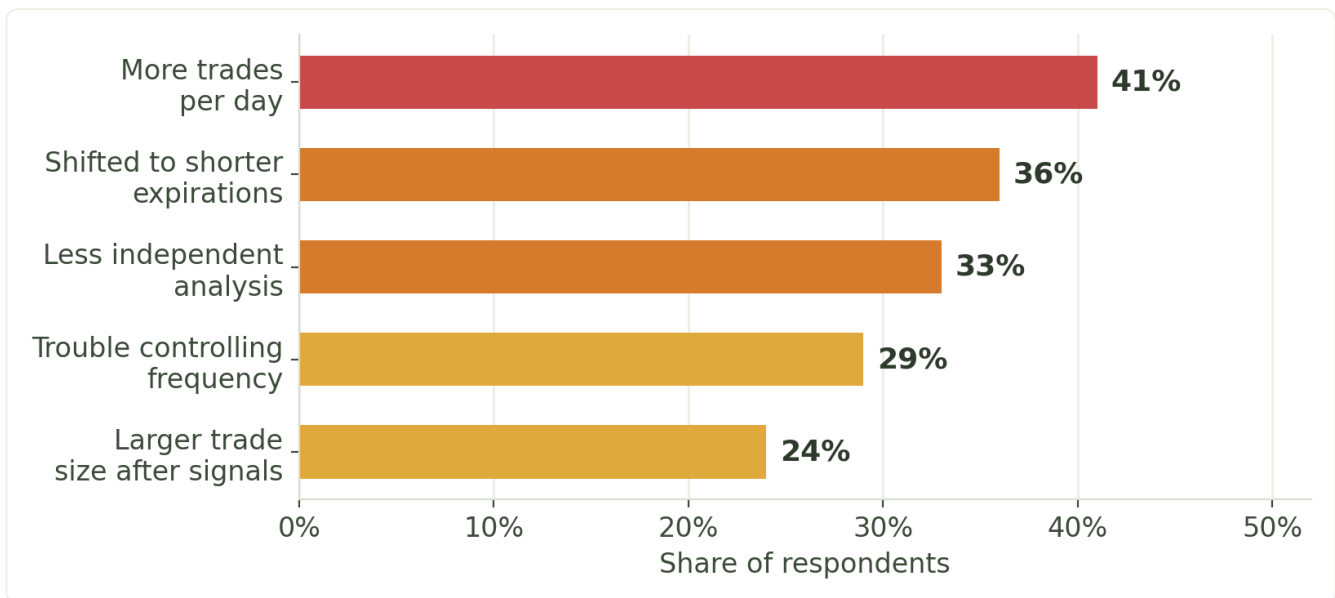
RESPONSE	SHARE	NUMBER OF TRADERS
AI improves trading results (perceived)	52%	624
Actual long-term profit improvement	21%	252
Results became worse	34%	408
No measurable difference or unsure	45%	540

**INSIGHT**

The findings reveal a strong behavioral mismatch between perceived and actual effectiveness. Most traders believe AI signals improve performance, but only one in five reports sustainable profitability gains — meaning automation's marketing narrative outpaces its measurable impact.

**Overtrading behavior**

To evaluate whether AI-generated signals contribute to excessive trading activity, we analyzed how automation affects trading frequency, expiration selection and risk-taking behavior.



*Behavioral impact of AI trading systems on volume and discipline*

#### INSIGHT

Automation compresses decision cycles and increases speculative trading frequency, particularly in short-expiration binary environments where speed replaces structured analysis. The combination — more trades, shorter expirations, less analysis — describes a classic overtrading pattern that erodes long-term performance.

## 08 Practical Implications

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To navigate increasingly automated trading environments responsibly, binary traders should focus on maintaining analytical independence and risk discipline:

- **Treat AI signals as informational tools, not guaranteed outcomes.** Automated systems can identify patterns or volatility conditions, but they cannot eliminate market uncertainty or guarantee profitability.
- **Avoid blind execution.** Receiving a signal should trigger verification, not automatic action. Confirm setups independently before opening positions.
- **Limit notification-driven trading.** Constant alerts increase emotional fatigue and encourage overtrading. Disabling non-essential push notifications can improve discipline and reduce impulsive entries.
- **Separate analytics from marketing.** Many Telegram signal groups operate as affiliate funnels designed to maximize broker registrations and trading volume rather than trader profitability.
- **Use risk management independently from signals.** Position sizing, stop-loss logic and emotional discipline remain the trader's responsibility — regardless of whether a signal originates from AI or a human analyst.

- **Prioritize execution quality.** Fast execution, transparent pricing and platform reliability remain critical, especially in short-expiration environments where milliseconds affect outcomes.

AI trading systems may improve accessibility and convenience, but they cannot replace structured risk management or disciplined trading psychology.

## 09 Conclusion

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The research confirms that AI-generated signals and Telegram bots have reshaped binary options behavior — but largely along behavioral rather than performance dimensions. Adoption is high, perceived benefit is high, and yet actual profitability gains remain modest at best. The strongest measurable effects are increased frequency, impulsive execution and amplified vulnerability among inexperienced traders and short-expiration users.

The practical implication is clear: in binary options, automation does not substitute for discipline. AI signals add value only when integrated into a structured process that includes independent verification, controlled position sizing and resistance to notification-driven urgency. Without those safeguards, automation tends to amplify the worst patterns of retail trading rather than correct them.

## 10 Data Sources & References

TU

- IOSCO (2025). *Finfluencers Final Report and Retail Market Conduct Risks*.
- UK FCA (2025). *International action against illegal finfluencers and unauthorized trading promotions*.
- European Securities and Markets Authority (ESMA, 2024). *CFDs and other speculative products under MiFID*.
- European Securities and Markets Authority (ESMA, 2023). *MiFID II investor protection topics linked to digitalisation and gamification*.
- U.S. Securities and Exchange Commission (SEC, 2023). *Predictive Data Analytics and AI-driven investor behavior risks*.
- Bank for International Settlements (BIS, 2022). *Retail investors' participation in speculative digital trading environments*.
- OECD/INFE (2021). *Supporting resilience through digital financial literacy*.
- National Bureau of Economic Research (NBER, 2024). *Behavioral finance and retail speculative trading studies*.
- IOSCO (2024). *Online imitative trading practices and digital engagement techniques*.
- OECD (2024). *Financial literacy and digital financial ecosystems*.
- IdSurvey. *CAWI Methodology Overview*.