

Oxford Risk Insights

This report presents insights derived from exploratory data analysis (EDA) examining the relationship between **personality traits** and **investment behavior** among **786 individuals**. The comprehensive dataset encompasses two primary analytical dimensions: individual personality characteristics and corresponding investment portfolio allocations.

The analysis focuses on five distinct **personality traits**—*Confidence*, *Risk Tolerance*, *Composure*, *Impulsivity*, and *Impact Desire*—measured alongside **investment data** spanning six asset categories across five international currencies. This dual-perspective approach enables examination of how psychological characteristics influence financial decision-making across diverse investment vehicles and market exposures.

The report systematically explores four key analytical areas: personality trait distributions, investment allocation patterns, correlations between personality characteristics and currency preferences, and relationships between individual traits and specific asset class selections. Through this structured analysis, we aim to identify actionable insights for developing more effective, personality-driven investment advisory frameworks.

Key Takeaways

- **Strong personality correlations:** Confidence and Risk Tolerance are highly correlated, indicating potential redundancy for modeling purposes.
- **Cryptocurrency-confidence relationship:** Higher confidence levels predict increased cryptocurrency investments, suggesting confidence drives risk-taking in emerging assets.
- **Asset-specific patterns:** Confidence shows different relationships across asset classes (positive for crypto and bonds, negative for equities).
- **Well-balanced sample:** Personality traits show normal distributions without significant skewness, providing reliable baseline data.
- **Investment distributions** are relatively even across asset types and currencies.
- **Correlational relationships identified**, but causality remains unestablished.

Personality Traits

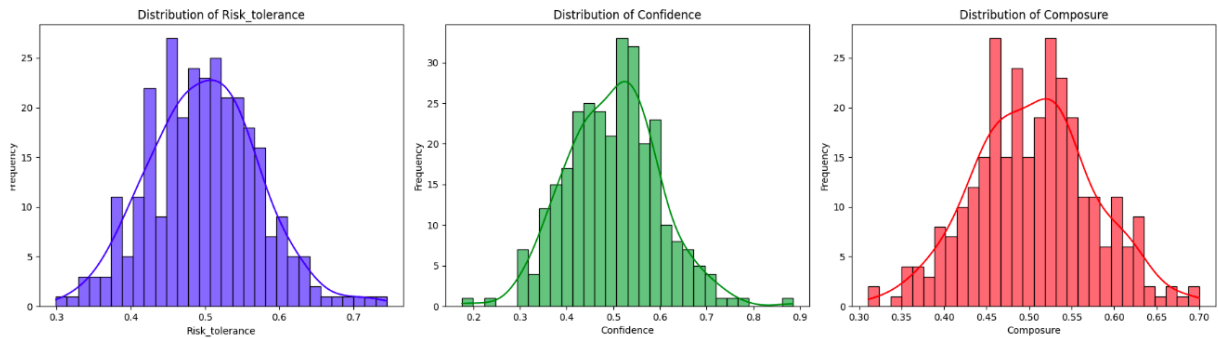


Diagram 1. Frequency of **Risk Tolerance**, **Confidence** and **Composure** measured as a value between 0-1.

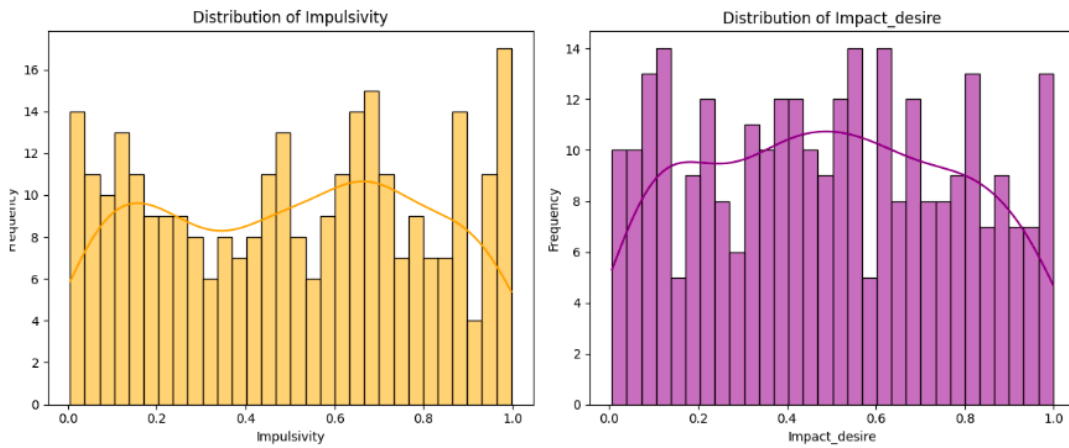


Diagram 2. Frequency of **Impulsivity** and **Impact desier** measured as a value between 0-1.

The personality traits measured in this dataset exhibit two distinct distribution patterns that reveal important characteristics about the sample population. **Risk Tolerance**, **Confidence**, and **Composure** appear to follow a **normal distribution**, evidenced by their classic bell-shaped curves. In contrast, **Impulsivity** and **Impact Desire** display more irregular and less predictable distribution patterns. Furthermore, the personality trait data shows no significant skewness, indicating a well-balanced sample across all measured characteristics.

Investments

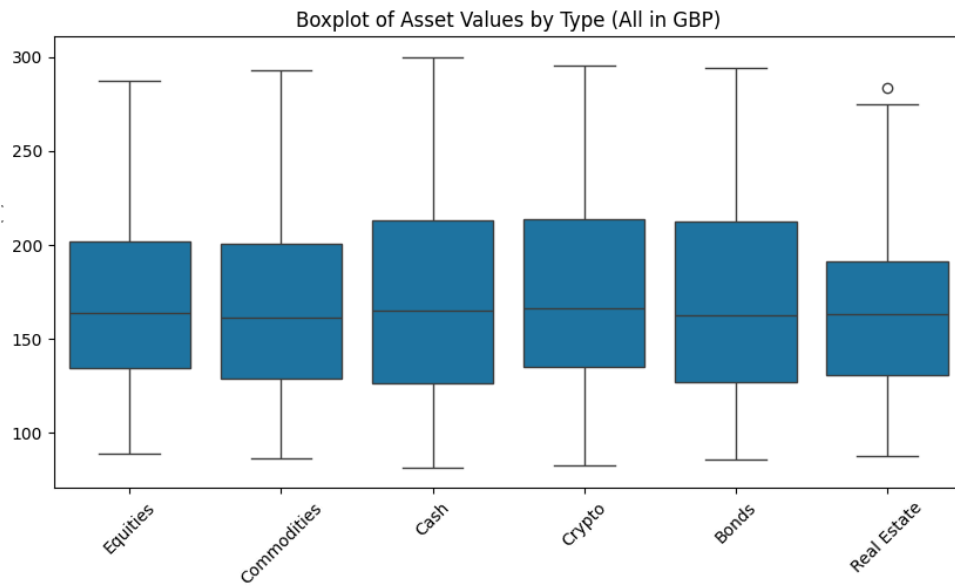


Diagram 3. Boxplots of investments across assets in GBP.

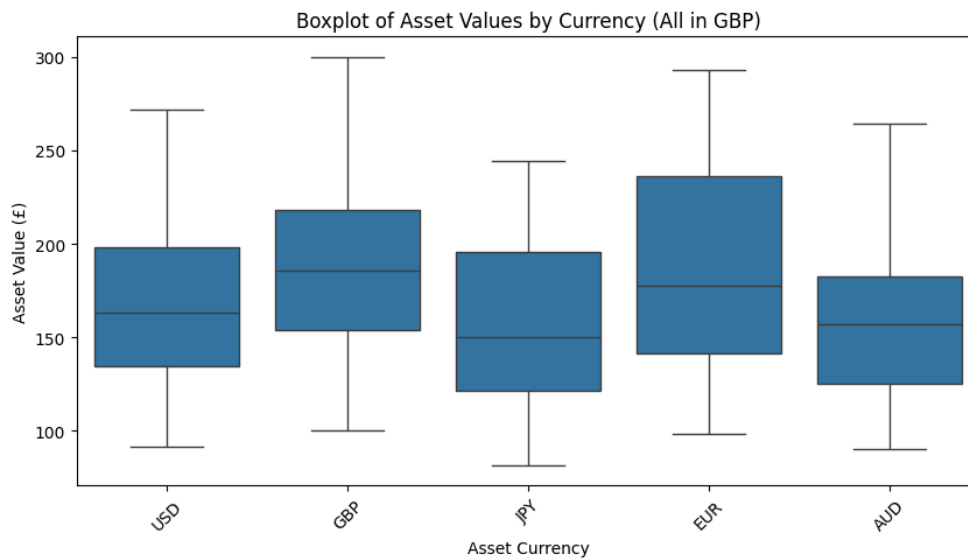


Diagram 4. Boxplots of investments across currencies converted to GBP using exchange rates from 15 of June 2025.

The analysis reveals an equitable distribution of investments across the six asset categories, with all foreign currencies standardized to GBP equivalents for comparative purposes. Although individual investor preferences demonstrate variation across currencies, clear distinctions remain between asset classifications (e.g., bonds versus equities). This differentiation proves significant given that these instruments represent fundamentally different financial products characterized by varying risk-return profiles. The data demonstrates uniform allocation patterns across asset classes.

Furthermore, investment distributions exhibit relative equilibrium across all currency denominations, with a marginal preference observed for EUR-denominated assets. This diversification strategy across both asset types and currency exposures functions to mitigate aggregate portfolio risk exposure.

Nevertheless, this macroscopic perspective fails to illuminate individual investor allocation strategies. To facilitate a more granular understanding of investment behavior at the individual level, subsequent analysis will examine the correlations between personality characteristics and four distinct investment categories within a unified currency framework.

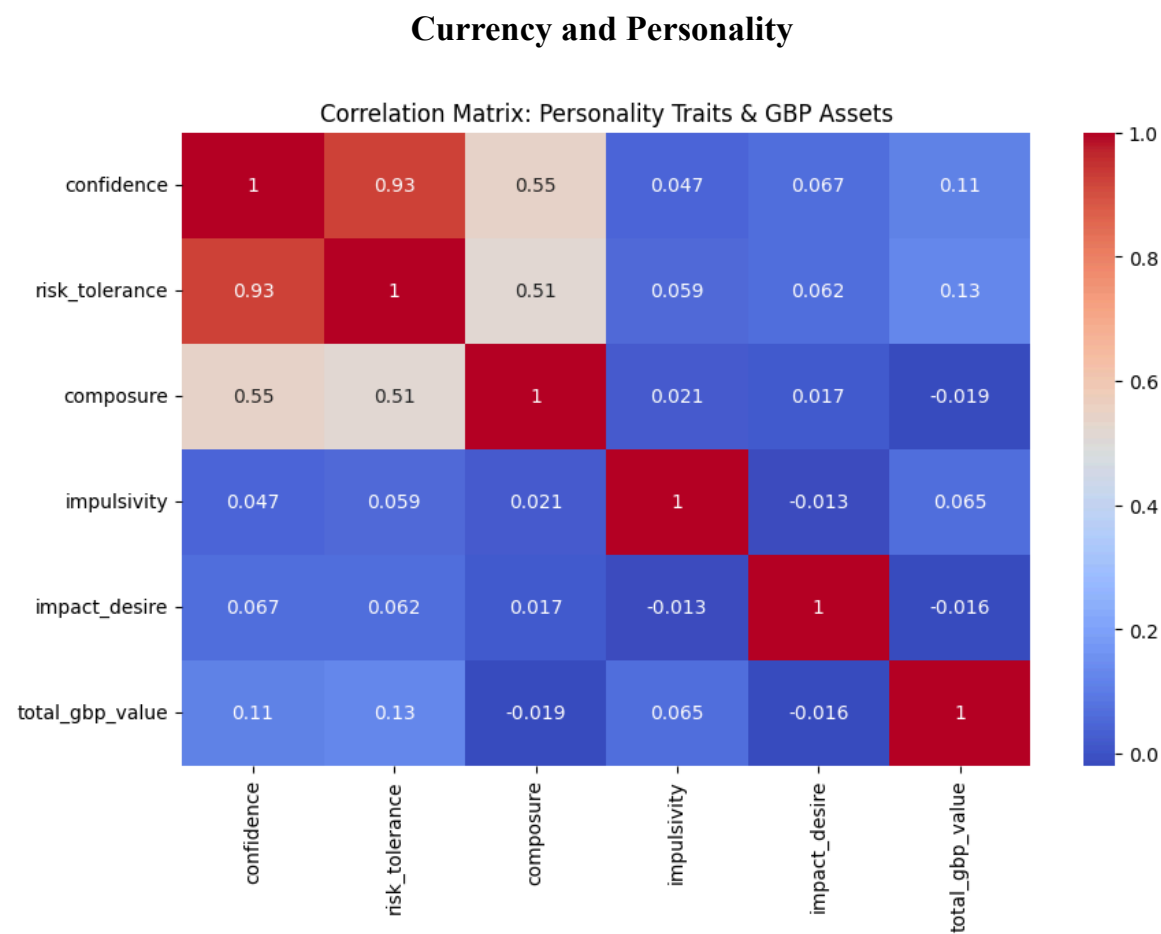


Diagram 5. Correlation Matric between personality traits and GBP.

The correlation matrix illustrates interrelationships among the five personality traits, where coefficients range from -1 to 1, with values approaching 1 indicating strong positive linear relationships. The analysis reveals two significant correlations: **Confidence** and **Risk Tolerance** demonstrate a **very strong correlation (r = 0.93)**, while **Composure** and **Confidence** exhibit a **strong correlation (r = 0.55)**, suggesting that individuals maintaining composure during market volatility also tend to demonstrate higher confidence levels. Notably, the substantial Confidence-Risk Tolerance correlation presents **multicollinearity** concerns for regression modeling, indicating one variable could be excluded without significant information loss. However, these findings should be interpreted cautiously as this analysis focuses exclusively on GBP-denominated investments and does not account for variations across financial products or currencies.

Asset type and Personality

To examine the relationship between personality traits and investment preferences without presupposing correlational assumptions, **scatter plot analyses** were employed to compare each personality dimension against investment allocations across strategically selected asset classifications: cash versus cryptocurrency, and government bonds versus equity securities. These asset pairings were deliberately chosen as they represent **diametrically opposed positions on the risk-return continuum**. Cash instruments maintain virtually zero risk exposure, whereas cryptocurrency assets exhibit extreme volatility and speculative characteristics. Correspondingly, while bond instruments encompass a heterogeneous array of debt securities, they typically demonstrate substantially lower risk profiles relative to equity investments. This methodological approach of contrasting traditional conservative asset classes (cash and bonds) against higher-risk alternative investments (cryptocurrency and equities) facilitates comprehensive analysis of how individual personality characteristics influence risk tolerance and investment decision-making across diverse financial product categories.

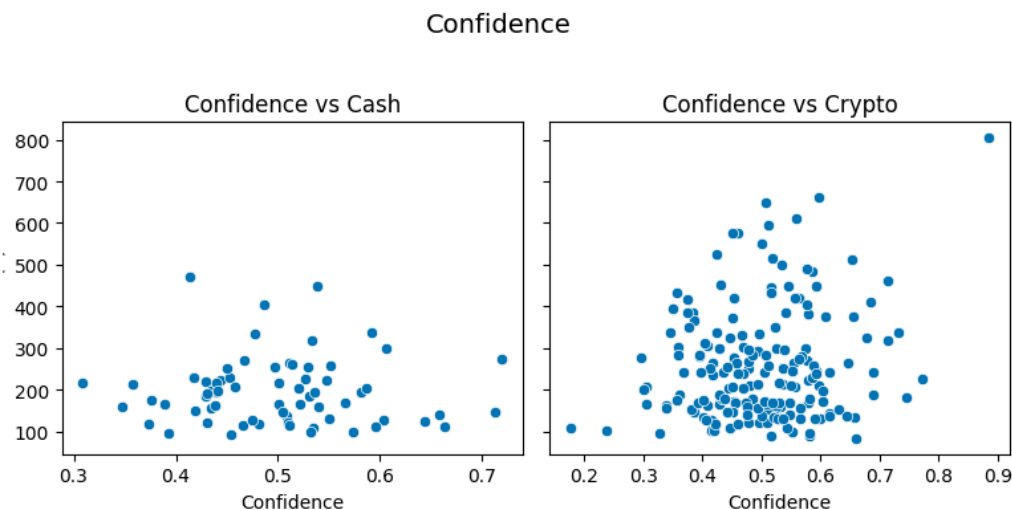


Diagram 6. Scatter plots of investments depending on confidence levels.

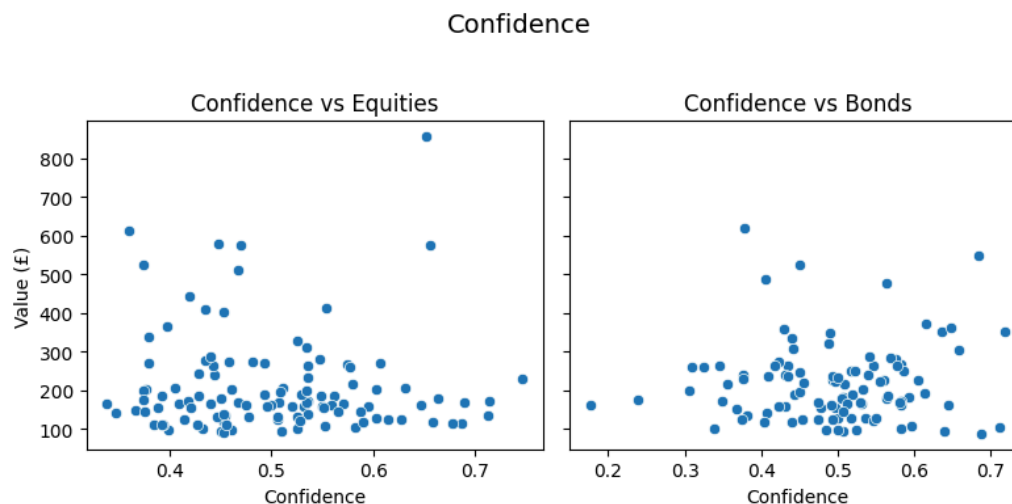


Diagram 7. Scatter plots of investments depending on confidence levels.

The scatter plot analysis reveals a potential **positive linear relationship between Confidence and cryptocurrency investment**, indicating that higher confidence levels correspond to increased cryptocurrency allocations. While this correlation does not establish causality, it suggests that confidence may influence risk-taking behavior in emerging financial instruments.

This relationship does not extend to traditional assets. Confidence exhibits a negative correlation with equity investments, though outliers limit the reliability of this finding. Conversely, confidence demonstrates a positive association with bond investments, suggesting different behavioral patterns across asset classes.

The strength of these relationships warrants formal statistical testing through linear regression analysis or fixed-effects modeling across asset categories. However, these findings are constrained by several limitations: the analysis lacks demographic controls (gender, education), and the measurement methodology for personality traits remains unspecified, potentially affecting result reliability.

Suggestions

1. **Demographic Analysis**
 - Examine how personality-investment relationships vary across demographic groups.
2. **Statistical Validation**
 - Conduct formal linear regression analysis to quantify relationship strength.
 - Implement fixed-effects modeling to control for unobserved variables.
 - Address multicollinearity through variable selection or dimensionality reduction.
3. **Methodological Improvements**
 - Document personality trait measurement methodology.
 - Expand analysis beyond GBP to include all currency exposures.
 - Include additional asset classes and time-series data if available.
4. **Predictive Modeling**
 - Develop investor risk profiling tools based on personality characteristics.