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Intuitive Decision-Making in the GCC Cryptocurrency Market

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Abstract: The aim of this study is to investigate the phenomenon of intuitive decision-making in the GCC cryptocurrency market using both secondary data and primary data. In this paper, we explore how investors in the GCC cryptocurrency market use intuition to make decisions. The study collected 310 daily observations of the five most well-known cryptocurrencies, the GCC stock market indices, the VIX, and gold between January 1, 2022, and January 1, 2023, using data from the coin market cap and data streams. The study also adopted Hensman and Sadler-Smith's typology of intuitive and contextual "signaling" and conducted extensive semi-structured interviews with 18 experienced investors from Bahrain, Saudi Arabia, and the United Arab Emirates and self-reported cognitive tests with 12 participants. It finds that Bitcoin is the most popular and volatile cryptocurrency, while Ripple is the least popular and least volatile. Bahraini investors are more likely to rely on instinct than investors from Saudi Arabia and the UAE. Investors should consider the volatility and average value of cryptocurrencies when making investment decisions, and be aware of their preferred cognitive thinking style.

Keywords: Decision making; Behavioral Finance; Intuition, Cryptocurrency Market, Bitcoin, GCC.

1 Introduction

Intuition can be defined as a "gut feeling," "hunch," or "vibes" that result from unconscious, associationistic cognitive and affective processes. These processes produce quick, comprehensive assessments whose validity depends on the interaction of the task environment and the individual's characteristics (Jean, 2008; Amidu et al., 2019). Intuition results in direct knowing without any use of conscious reasoning and comprises both cognitive and affective elements (Jasiñak, 2018; Devine & Siddiqui, 2023, p.1475). When making decisions, intuition can feel right despite one's inability to articulate a reason and can feel right despite one's awareness of the rules or knowledge used for inference (Loukil et al., 2021, p. 233). While there has been a significant amount of conceptualizing and theorizing the construct in management and behavioral finance over the last three decades, the vast majority of empirical studies have been descriptive and theoretic. Recent studies have outpaced empirical research; hence this study is needed to balance conceptual and theoretical advancement with inductively based analysis (Sadler-Smith, 2016; Hensman & Sadler-Smith, 2011).

It is impossible to halt the evolution of cryptocurrencies. Bitcoin and other Altcoins, which were created for alternative investment, are available in circulation, and many investors closely watch them as a potential revenue generator after Bitcoin's launch. In 2017, the return on Bitcoin increased by an astonishing 1358 percent (Luu Duc Huynh, 2019). Bitcoin became a "financial phenomenon" recognized as legal tender by the Chicago Board Options Exchange (CBOE) and the Chicago Mercantile Exchange (CME), and it was constantly mentioned on the internet and in social media. However, it abruptly experienced a "huge crash" that affected the entire market, causing numerous coins to start over at zero. As a result of this shock, investors worldwide are more hesitant to invest their money (Chua et al., 2023).

The cryptocurrency market is a vital sector of the global and GCC economies, and investor decisions can have significant impacts on shareholders, depositors, and the economy as a whole (Kumar & Padakandla, 2022; Ranjan et al., 2022; Chou et al., 2022). Given this context, the study aims to investigate the role of intuition in investment decision-making in the GCC cryptocurrency market. The study seeks to answer questions such as whether cryptocurrency markets in the GCC are solely driven by "hard" data ingested in sophisticated computational models of risk, capital, and credit or whether cryptocurrency investors also rely on intuition. If so, how do they use it, and what factors affect its use?

The rest of the paper is structured as follows. Section 2 reviews the literature on intuition in investment decisions. Section 3 summarizes the data collection and methodology. The findings and outcomes of the study are presented in Section 4, followed by discussions, conclusions, and recommendations in Sections 5, 6 and 7 respectively.

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2 Literature Review

Behavioral finance is often criticized by proponents of the neoclassical paradigm for not providing a stable rule of thumb to predict and judge financial situations consistently (Li et al., 2021). However, behavioral finance has many benefits as a descriptive model, and integrating neoclassical models that represent ideal situations with behavioral finance could enhance shareholder wealth and firm value. A new paradigm has emerged in the form of neuroscience’s perspective of finance, which merges behavioral aspects of economic agents with specific brain functions to identify the causes of behavior deviations. This paradigm includes various models of behavioral finance, such as optimism, framing, disposition effect, over/under reaction, sensation seeking, anchoring and adjustment, herd behavior, representativeness, cognitive dissonance, mental accounting, and availability (Anolm et al., 2015; Wei et al., 2023).

Optimism is a personal characteristic in which managers overestimate the firm's value and performance, leading them to underestimate bad performance and downplay latent uncertainty, causing them to believe that the firm's share value is underestimated by the capital market (Ketokivi, 2019; Kim et al., 2023). Ketokivi (2019) defined optimism as a "subjective belief that favorable future events are more likely than they actually are," which creates a better-than-average effect. Heaton (1980), a pioneer in incorporating managerial optimism with corporate finance, found that managers believe in their capabilities to control firm performance, which can have severe impacts. Heaton also documented through Hanafi (2018) that optimistic managers are always committed to the firm's outcomes. The optimistic agent overestimates the probability of good things happening, and for the manager, they overestimate the higher expected returns the firm can attain. Hanafi (2018) differentiates between overconfidence and optimism by stating that overconfidence is a "risk perception bias" in which managers underestimate the riskiness of earnings, while optimism is a "growth perception bias" in which managers overestimate the growth rate of earnings. Furthermore, Hamsa & Bellundagi (2017), Al-Sabti (2023) and Cai (2023) differentiate between overconfidence and optimism, with optimism referring to the manager's belief in good outcomes and overconfidence referring to the manager's belief in their information and its precision and reality. According to the definition of optimism and the pioneer study of managerial irrationality, optimistic managers overestimate firm performance, which can affect takeover decisions and lead firms to engage in more acquisitions.

Framing refers to how individuals perceive concepts and how they impact decision-making (Hadi et al., 2018). The disposition effect is the tendency of individuals to sell shares at high prices and keep those with lower prices (Converse et al., 1986). Over/under reaction is considered the starting point of behavioral finance in battling the efficient market hypothesis, in which investors' reactions to market changes vary. The individual tends to overestimate recent information and react accordingly, while underestimating prior information in making decisions. This bias contradicts the efficient market hypothesis, which assumes that the expected residuals of a specific security are equal to zero (Bowden, 2015; Chomeya, 2010). Sensation seeking is a personality trait in which managers’ increase overall firm risk by making acquisition decisions. Anchoring and adjustment refer to individuals setting a benchmark (anchor) to compare with and judge other situations, which may lead to overestimation or underestimation of events and situations (Dobson & Poels, 2020). Herd behavior appears when market agents follow other agents' trading activities, which is related to age and experience. This behavior has many motives, such as following the most experienced agents and fear of being different (Choi et al., 2014). Representativeness (law of small numbers) biases managers who expect future exchange rates using historical data, explaining why historical data is used in predicting and deciding current corporate issues. This bias is studied in risk management research, which explains deviation from the hedging policy (Candraningrat et al., 2018; Liu, 2023). Furthermore, cognitive dissonance is psychological tension that individuals experience when confronted with a contradiction between their beliefs and available information to make a decision. In this case, individuals deal with new information as a supportive tool to make a decision (Gigerenzer & Gaissmaier, 2011).

Mental accounting refers to thinking separately about one situation from another (Guo et al., 2017). Previously, Shefrin (2001) gave an example to illustrate mental accounting, where individuals use different mentalities in two situations. Shefrin compared individual choices when facing sure gains and sure losses, finding that individuals are loss averse when facing sure losses and risk averse when facing sure gains. Availability heuristic appears when individuals assess the probability of specific event occurrence based on the frequency of prior event occurrence. This bias is caused by individual ability to retrieve event occurrence and imaginability (Tversky and Kahneman, 1974). Other models include reference point and disjunction effect (Abdeldayem & Aldulaimi, 2022a&b; Lavrutich et al., 2023).

The majority of decisions are made in a risk-and-uncertainty-filled environment. In situations where risks cannot be known, other decisions must be made. Despite the extensive studies on uncertainty and many distinctions in this literature, recent researchers have defined extreme uncertainty as decisions where risks are unknown (Abdeldayem & Aldulaimi, 2021; Zhou, San & Liu, 2023). This definition of extreme uncertainty is consistent with the creation theory of uncertainty (Knight, 1921). Angel investors make decisions about investments in ideas for markets that frequently do not yet exist.
and propose products and services for which there is no precedent, in situations where the degree of uncertainty is so great as to qualify as unknowable. In other words, rather than merely dealing with decision contexts where probabilities are unknown, Knight (1921) argues that angel investors deal with the kinds of "unknown unknowns" that include uncertainty and noise because there is a lot of unsystematic risk and because there are conditions of evolving certainty around systematic risk. Simply put, choosing between uncertain market solutions while also juggling inherent uncertainty about the services, products, and markets themselves is what one of the angels in our sample refers to as "chasing an invisible moving target" (Knight, 1921; Abdeldayem et al., 2021).

Although there are many theoretical ways to describe uncertainty, recent research on unknowable risks best captures the choices that investors in the cryptocurrency market should make. Experts divide risks into three categories: knowable (K), which can be given probabilities; uncertain (U), or risks that are known but cannot be quantified; and unknowable (U), in which the risks cannot be known (Huang & Pearce, 2015; Ainia & Lutfi, 2019). The majority of research on making decisions when risks are unknown has been done in behavioral finance, where researchers emphasize the distinction between uncertainty and unknowability (Abdeldayem & Sadeek, 2018; Shrotryia & Kalra, 2022). Historically, unknowable risks have attracted the most attention when associated with unfavorable outcomes, such as planes crashing into the World Trade Center towers or catastrophic weather events. However, to angel investors, especially experienced ones, unknowable risks may represent more than just unforeseen events. In this study, we explore why experienced investors in the GCC cryptocurrency believe that the only way to find the most alluring, extraordinarily profitable investments for themselves is by investing in businesses that face unknowable risks. We also discuss the impact of various factors on how they manage unknowable risks.

The advent of digital technology has gradually altered monetary systems. The digital exchange, which serves as the platform for virtual currency, is what is referred to as the "cryptocurrency market." Hence, the exchange status is available online. It is notable that the transactions have kept using cutting-edge terminology "cryptography." This work is done to secure earlier transactions, which are necessary to add to and update the electronic ledger known as a "blockchain" and to record them (Luu Duc Huynh, 2019; Rathore et al., 2022; Guiso & Zaccaria, 2023).

The digital coin that functions in the previously stated context is referred to as "cryptocurrency." Bitcoin, introduced in 2009 by Satoshi Nakamoto, is one of the coins worth mentioning. Despite detractors questioning why the price of Bitcoin increased after ten years, Bitcoin and its illustrative coins (Ethereum, Ripple, Litecoin, Stellar, etc.) have repeatedly attracted investors' attention, gradually taking the place of emerging financial assets (Luu Duc Huynh, 2019; Loukil et al., 2021; Blohm et al., 2022). However, there are concerns about the cryptocurrency market, as coin miners frequently use a lot of energy and computer memory to produce a "reward" or a brand-new coin. The coin stake can be generated in this manner without depending on wealth, making it deterministic, and the supply-demand of trading investors can be used to explain the price increase (Thewissen et al., 2022; Zhang et al., 2022).

Thus, the goal of the current study is to fill this gap, based on two complementary theories, i.e., expected utility theory and prospect theory, to demonstrate how investor cognitive bias and investor intuitive attributes influence investment decisions in the GCC cryptocurrency market. In an inefficient market like the one for cryptocurrencies, behavioral factors rooted in psychology may explain investment decisions' quality (Kinatta et al., 2021; Dolatsara et al., 2022). Investor cognitive bias includes framing, cognitive heuristics, and mental accounting, whereas investor intuitive attributes include the degree of confidence, loss aversion, and herding behavior (Abdeldayem & Aldulaimi, 2020). Investors use mental shortcuts as a coping mechanism for information processing when there is market inefficiency. Mutta et al. (2021) claim that there is more to crypto asset pricing than just the basics of investing. Due to bounded rationality, when evaluating the effectiveness of investment decisions, we herd, react emotionally, and are overly averse to loss. We also anchor to the past and the opinions of others, prioritize current information, and discount evidence that contradicts our preconceptions. Therefore, this study investigates the relationship between intuitive investor attributes, investor cognitive bias, and the quality of investment decisions in the GCC cryptocurrency market, finding that both are important predictors of investment decision quality.

3 Methodologies

As mentioned earlier, the purpose of this study is to investigate the phenomenon of intuitive decision-making in the GCC cryptocurrency market using both secondary data and primary data.

First, from January 1, 2022, to January 1, 2023, we sampled 310 daily observations of the five most popular cryptocurrencies (Bitcoin, Ethereum, dash, monero, and ripple), the GCC stock market indices (Bahrain (BAX), Saudi Arabia (TASI), Abu Dhabi (ADI), the VIX, and gold). Data from the coin market cap and data streams were used to compile this study.

Second, there is a dearth of published qualitative research on intuition in the financial sector regarding how intuition
manifests itself in the cryptocurrency market, such as that by Hensman and Sadler-Smith (2011), Miller et al. (2013), and Wu (2022). To find a methodological fit for our overall goal, we used open-ended questions, qualitative data collection through interviews, and thematic content analyses in this study.

Our sample of respondents was chosen primarily based on seniority and years of cryptocurrency investment experience. Domain-specific experience enables decision-makers to compress learning, "chunk" information, and pattern-match (Devine & Siddiqui, 2023; Max & Uhl, 2023), and a "rule of thumb" for the acquisition of expertise is ten years of learning, practice, and experience (Bao, Meng, & Wu, 2021). We chose highly experienced decision-makers as our unit of analysis and only conducted interviews with investors who had five years or more of experience. We used a convenience sample of eighteen cryptocurrency investors, eleven of whom were men (9 from Bahrain, 5 from Saudi Arabia, and 4 from the UAE). Each participant was scheduled for a 45-minute semi-structured interview, resulting in 13.5 hours of transcription. Our sample size is comparable to that of other studies of intuitive decision making in naturalistic settings (e.g., Hensman & Sadler-Smith, 2011; Amidu et al., 2019; Abdeldayem et al., 2021; Wu, 2022). Participants had an average of seven years of experience investing in various cryptocurrencies, four years on average in the market, and two roles on average. This group of seasoned investors had a combined experience of 88 years in the cryptocurrency market. Therefore, figure 1 illustrates the theoretical framework for intuitive decision-making in the GCC cryptocurrency market. The numbers in parentheses are just for convenience and only refer to the classification system used for the content analysis (Darwish et al, 2021; Ali et al., 2022).

![Diagram](image)

**Fig. 1:** The theoretical framework for intuitive decision-making in the GCC cryptocurrency market


### 4 Results

The descriptive statistics of the evaluative variables are displayed in Table 1. According to our findings, among the crypto assets, Bitcoin has the highest average value and the greatest volatility in the GCC cryptocurrency market. However, RIPPLE has the lowest average value and is the least volatile compared to other crypto assets. When it comes to average value and volatility, the Saudi Arabia market index stands out among the stock market indices. The next highest average value after gold is for WTI, but when compared to gold, WTI is the most volatile throughout the GCC cryptocurrency market.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Stand. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bitcoin</td>
<td>310</td>
<td>2.534</td>
<td>0.615</td>
<td>2.322</td>
<td>2.707</td>
</tr>
<tr>
<td>Ethereum</td>
<td>310</td>
<td>1.478</td>
<td>0.419</td>
<td>1.331</td>
<td>1.568</td>
</tr>
<tr>
<td>Dash</td>
<td>310</td>
<td>1.282</td>
<td>0.276</td>
<td>1.052</td>
<td>1.477</td>
</tr>
<tr>
<td>Monero</td>
<td>310</td>
<td>1.185</td>
<td>0.345</td>
<td>0.998</td>
<td>1.361</td>
</tr>
<tr>
<td>Ripple</td>
<td>310</td>
<td>0.0818</td>
<td>0.131</td>
<td>0.0398</td>
<td>0.134</td>
</tr>
<tr>
<td>Gold</td>
<td>310</td>
<td>2.078</td>
<td>0.772</td>
<td>2.042</td>
<td>2.130</td>
</tr>
<tr>
<td>WTI</td>
<td>310</td>
<td>1.120</td>
<td>0.229</td>
<td>0.658</td>
<td>1.198</td>
</tr>
<tr>
<td>Bahrain</td>
<td>310</td>
<td>2.084</td>
<td>0.0533</td>
<td>2.011</td>
<td>2.119</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>310</td>
<td>2.572</td>
<td>0.081</td>
<td>2.483</td>
<td>2.612</td>
</tr>
<tr>
<td>Abu Dhabi (UAE)</td>
<td>310</td>
<td>2.428</td>
<td>0.079</td>
<td>2.316</td>
<td>2.455</td>
</tr>
<tr>
<td>VIX</td>
<td>310</td>
<td>0.820</td>
<td>0.335</td>
<td>0.698</td>
<td>1.261</td>
</tr>
</tbody>
</table>
5 Discussions

In accordance with major previous research, particularly Hensman & Sadler-Smith (2011) and Wu (2022), interviews were scheduled to last 45 minutes each and were recorded, transcribed, and analyzed using a three-stage process (Unitizing, Categorizing, and Classifying). This resulted in a total of 267 thought units (TUs). The TUs were classified into 12 sub-groups and then organized into five main categories, including: (i) "intuiting outcomes"; (ii) "cognitive and affective processes"; (iii) "individual factors"; (iv) "decisional factors"; and (v) "organizational and contextual factors," as indicated in Table 2. Below are descriptions of the findings, commentary, and examples of quotes (P1-P18, referring to participants). We summarize the results using the five categories that our interview data revealed.

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-category</th>
<th>Participants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Outcome of intuiting</td>
<td>“Acknowledgement of intuition”</td>
<td>P1: 1 0 0 0 0 1 0 1 0 0 0 1 1 0 0 1 1 1 0 0 1 1 1 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Intuitive judgment”</td>
<td>1 0 0 0 1 1 1 0 1 1 1 0 1 1 1 1 0 1 1 1 12</td>
<td></td>
</tr>
<tr>
<td>2. Cognitive and affective processes</td>
<td>“Basis in experience &amp; learning”</td>
<td>3 1 2 4 1 0 2 1 3 2 0 5 0 2 1 1 2 1 31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Pattern matching”</td>
<td>1 0 0 1 1 2 0 1 0 0 1 0 1 1 0 1 1 0 11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Somatic component”</td>
<td>11 2 3 0 6 4 1 0 8 2 3 7 1 2 5 4 0 2 54</td>
<td></td>
</tr>
<tr>
<td>3. Individual factors</td>
<td>“Self-efficacy of decision making”</td>
<td>3 1 4 0 2 4 0 2 1 0 3 2 1 5 0 6 1 1 36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Sense of credibility”</td>
<td>2 0 1 1 3 1 2 1 1 2 1 0 1 3 1 2 1 0 23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Social aspects of intuition”</td>
<td>0 1 0 2 1 1 2 0 1 1 3 1 1 0 2 3 1 1 21</td>
<td></td>
</tr>
<tr>
<td>4. Decisional factors</td>
<td>Uncertainty”</td>
<td>1 0 2 1 1 2 0 1 1 0 2 0 1 1 1 1 1 1 12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Time”</td>
<td>1 2 0 0 2 2 1 1 0 1 2 1 1 0 1 1 2 1 19</td>
<td></td>
</tr>
<tr>
<td>5. Organizational contextual factors</td>
<td>“Constraints”</td>
<td>2 1 2 0 1 1 0 0 1 2 1 1 1 0 1 2 0 0 17</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Accountability”</td>
<td>1 0 0 0 1 2 1 1 0 1 0 2 1 1 1 1 1 1 15</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>267</td>
<td></td>
</tr>
</tbody>
</table>

Based on these findings, two general conclusions can be drawn: first, intuitions, if followed, are essentially "bets" and should be treated as hypotheses open to empirical testing and potential falsification; second, intuitions are likely to be perceived as having less validity in business organizations than rational analyses.

6 Conclusions

The study aimed to investigate the phenomenon of intuitive decision-making in the GCC cryptocurrency market using both secondary data and primary data. First, between January 1, 2022, and January 1, 2023, we sampled 310 daily observations of the five most well-known cryptocurrencies (Bitcoin, Ethereum, Dash, Monero, and Ripple), the GCC stock market indices (Bahrain (BAX), Saudi Arabia (TASI), Abu Dhabi (ADI), the VIX, and gold). This study was put together using data from the coin market cap and data streams. Second, the study adopted Hensman and Sadler-Smith's (2011) typology of intuitive and contextual "signaling," which was revised by Wu (2022), and conducted extensive semi-structured interviews with eighteen experienced investors from Bahrain, Saudi Arabia, and the UAE. The findings reveal that, among the crypto assets, Bitcoin has the highest average value and the greatest volatility in the GCC cryptocurrency market. However, compared to other crypto assets, RIPPLE has the lowest average value and is the least volatile. When it comes to average value and volatility, the Saudi Arabia market index stands out among the stock market indices. The next highest average value after gold is for WTI, but when compared to gold, WTI is the most volatile throughout the GCC cryptocurrency market. Furthermore, the preference for an intuitive cognitive thinking style was similar in Bahraini and Saudi cryptocurrency investors. However, Bahraini investors were more likely to rely on instinct when making investment decisions than investors from Saudi Arabia and the UAE. Therefore, it can be inferred that using intuition differs from having an intuitive disposition. In other words, while people may have a dominant or preferred cognitive thinking style, the demands of the situation or task will have an impact on how they make decisions.
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