CHAPTER 3

3. CONCEPTUAL FRAMEWORK

In this chapter, key constructs of the study based on the review are identified using participative research diamond model (Van De Ven, 2007). It draws attention to the ambidextrous framework of decision making and conceptualizes behavioural factors influencing investor’s intuitive ability and cognitive capability. Accordingly, key behavioural constructs identified in the proposed research framework are defined and the emerging research hypothesis are explained.

3.1. Formulation of Conceptual Framework

As detailed in the earlier chapter, extensive review of studies indicates pertinent presence of behavioural interplay in investment decision making. Studies in the domain of managerial decision making have been also reviewed to understand the role of cognitive and intuitive faculty of the decision maker. It has been identified that decision makers are ambidextrous, wherein prominence of intuition and cognition depends on contextual and dispositional factors. An investor, like any other decision maker, relies on intuitive judgement and analytical assessment to improve the decision’s performance. Extensive review of the available literature (as elaborated in the preceding chapter) identifies multiple qualitative variables pertinent in decision making. Though these qualitative variables have been examined in general decision-making literature, yet conclusive studies in investment decision making are either non-existent or limited. At this stage of the research, it was a challenge to identify behavioural antecedents of investment decision making that are relevant, marginally studied, yet measurable. To overcome this challenge, participative research diamond model (Van De Ven, 2007) was adopted based on engaged scholarship of stakeholders. This helped the researchers to identify antecedents of investor’s intuitive and cognitive capability. Further, this led to development of the conceptual framework of the present research. Figure 3.1 elucidates this entire process.

The first step, as depicted in figure 3.1, lists qualitative variables which have been identified as a predictor of either intuition or cognition or both in the existing decision-making literature. These
variables have been categorized under three descriptive labels, namely, demographic variables, intrinsic variables and extrinsic variables.

**Figure 3.1: Procedure for Formulating Conceptual Framework**
Under demographic variables, role of gender, age, education, wealth and investment experience are marginally studied in investment decision making literature. Apart from demographic variables, there are extrinsic qualitative variables which describe socio-cultural environment of the decision maker. Particularly, social norms, religion and rituals and culture are extrinsic variables which describe environmental characteristics that influence an investor.

Finally, innate qualitative characteristics of an investor have been enlisted under intrinsic variables. They are consciousness, mindfulness, emotional intelligence, spirituality and personality.

The following paragraphs briefly narrate the causal relationships identified for the above qualitative variables.

**Demographic Variables:**

**Role of Gender** – Gender has been studied in the context of both general decision making and investment decision making studies. It has been established that gender effects risk-taking capacity of the decision maker and consequentially influences the investment decision. Powell and Ansic (1997) provide evidence that female investors have lower risk-taking propensity compared to male investors, and therefore adopt different financial strategies. Barber and Odean (2001) document that men are more overconfident that women, furthering their trading activity by 45 percent more than women.

**Role of Age, Investment Experience, Education and Wealth** – These have been discussed at length in chapter 2 under demographic variables.

**Extrinsic Variables:**

**Role of Social Norms** – Manifestation of social norms has been studied by researchers in the form of socially responsible investing, social trust and dislike for sin stocks. Researchers study ethical preference or choice of the investors aligned with the norms of socially responsible investing (SRI) (Sandberg and Nilsson, 2015; Glac, 2012; Williams, 2007). Hong and Kacperczyk (2009) provide evidence of the effect of social norms against investment in sin stocks, that is stocks if companies with business in alcohol, tobacco or gaming. These stocks are less preferred by institutions engaged in mutual funds or pension plans. Jin et al. (2016) document
that social trust embedded in regional ecosystem or countries with similar legal system are more likely to incorporate trust related information in foreign institutional investment decisions. Additionally, social trust and related information dissipates informational barriers in international stock markets.

**Role of Religion and Rituals** – Religion is a deep-rooted aspect of culture with considerable influence on the social norms, acceptability and belief system on the societal level and individual’s value system, habits and attitude at the personal level. It has been established that religiosity improves problem assessment (Spilka and Schmidt, 1983), provides rule book for choice behaviour (Schiffman and Kanuk, 1991), helps an individual in difficult and stressful times (Pargament and Hahn, 1986) and shapes assessment and locus of reference around supreme, divine and transcendent reality (Fernando and Jackson, 2006).

**Role of Culture** – Extant research contends that the tendency to engage in holistic and deliberative reasoning is differentially encouraged by East Asian and Western cultures. Buchtel and Norenzayan (2008) studied the impact of cultural difference in decision maker’s perception regarding relative importance of intuitive Vs cognitive style. They observed that compared to participants of Western culture, East Asians participants valued intuitive reasoning as more important and reasonable than analytic reasoning.

**Intrinsic Variables:**

**Role of Consciousness** – Consciousness is understood as the ability of a person to access greater information leading to enhanced awareness of what is known and what is not known. This heightened awareness provides greater choice. Also, higher consciousness improves ability for instinctive response with imperfect information, improves the accuracy of response of the executive (Khumala, 2009), and enhances creativity and confidence (Barrick, 2010).

**Role of Mindfulness** – Mindfulness is understood as an individual’s attentional stance which improves ability to handle obstructions in decision making process. Higher mindfulness induces ability to handle stressful situations (Davidson, 2000), improves executive functioning (Zeidan et al., 2010), improves attentional focus (Greenberg et al., 2012) and sustained attention of a decision maker.
**Role of Spirituality** – Benefits of workplace spirituality, a collective qualitative variable, has been established with increased trust within the organization (Wagner-Marsh and Conely, 1999), increased commitment to organizational goals (Delbecq, 1999), employee creativity (Freshman, 1999) and enhanced organizational performance (Neck and Milliman, 1994).

**Role of Emotional Intelligence** – Matzler et al. (2007) correlates performance of senior executives with emotional intelligence stating that the variation in performance is explained by emotional intelligence or ability to understand, decipher and interpret one’s emotional state.

**Role of Personality** – Multiple studies explore role of personal characteristics of the investors on their risk perception and risk attitude (Carducci and Wong, 1998; Mayfield et al., 2008). Studies have also identified correlation between personality type and investment horizon (Mayfield et al., 2008), IQ (Ackerman and Heggestad, 1997) and creativity (Kaufman 2013).

After the variables are identified, the challenge is to select the relevant research variables which are pertinent for investment decision making. Hence, in the second step (see figure 3.1), adapted version of participative research model has been applied to identify the research variables. Participative research diamond model (Van De Ven, 2007) is based on engaged scholarship of stakeholders. For the purpose of the study, adapted version is tailored according to the contextual variables as sown in figure 3.2. Van De Ven (2007) asserts that conceptualization of research problem should engage stakeholders throughout the process.

As is evident from figure 3.2, the process necessitates engaging expert stakeholders and seeking their views, in an iterative progression, for formulating the conceptual framework. In order to achieve this, experts from different domains, like public sector, private sector, administrative, academic and corporate, are invited to be a part of the engaged scholarship process. To justify the sensibilities of the objective of this exercise, it is ensured that the expert stakeholders should necessarily have investment experience. Six stakeholders across diverse domain and experience voluntarily agreed to be a part of the process of engaged scholarship (expert 1: 45 years’ experience across administrative, academic and investment; expert 2: 25 years’ experience in academics and social science research; expert 3: 27 years’ experience across corporate and investment; expert 4: 52 years’ experience in public sector strategic-administrative role,
researcher in eastern philosophical traditions; expert 5: 22 years’ trading experience and head of national depository participant; expert 6: 28 years’ investment and corporate experience, also a theological expert and eastern philosopher). Later, owing to non-response in the second level of communication from expert 5, he was dropped out from the engaged scholarship process.

Initially, the stakeholders are briefed regarding the problem statement along with the variables identified after the literature review. In the first interaction with the experts, they are asked to rank the variables under the three descriptive labels. The response of the experts is collated and presented in table 3.1.

Figure 3.2: Participative Research Model formulating Conceptual Framework (adapted from Van De Ven, 2007)
In the second interaction, based on results presented in table 3.1, a round of personal interview was scheduled. It was during this stage that expert 5 was unable to award any time slot, even after multiple follow-ups and rescheduling of appointment and was hence, dropped out. During personal interview stage, the expert’s response is assessed qualitatively and viewpoints consolidated. The process of assimilating their collective experience and further presenting it for discussion is repeated until a consensus was arrived at (refer figure 3.2).

Table 3.1: Rank of the Qualitative Variables

(using Van De Ven (2007) Participative Research Approach)

<table>
<thead>
<tr>
<th>Demographic Variables</th>
<th>Sum of Ranks</th>
<th>Resultant Rank</th>
</tr>
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<tbody>
<tr>
<td>1 DV1: Gender</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>2 DV2: Age</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>3 DV3: Investment Experience</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>4 DV4: Education</td>
<td>20</td>
<td>4</td>
</tr>
<tr>
<td>5 DV5: Wealth</td>
<td>22</td>
<td>5</td>
</tr>
</tbody>
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<tr>
<th>Extrinsic Variables</th>
<th>Sum of Ranks</th>
<th>Resultant Rank</th>
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<tbody>
<tr>
<td>6 EV1: Social Norms</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>7 EV2: Religion and Rituals</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>8 EV3: Culture</td>
<td>11</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intrinsic Variables</th>
<th>Sum of Ranks</th>
<th>Resultant Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 IV1: Consciousness</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>10 IV2: Mindfulness</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>11 IV3: Spirituality</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>12 IV4: Emotional Intelligence</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>13 IV5: Personality</td>
<td>13</td>
<td>2</td>
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Expert 4 and expert 6 opine that instead of selecting extrinsic variable, religion and rituals, religiosity, an intrinsic manifestation of the same, should be selected. This is specifically relevant since non-assisted individual decision-making framework is being assessed. An interesting observation is both expert 4 and expert 6 also have theological interests and are researchers of eastern philosophical traditions. This is further shared with other stakeholders in the process. Finally, a consensus is arrived at that in Indian cultural set up, religiosity and spirituality are intertwined in such a fashion that they are mostly used as synonyms. Hence, the experts suggest
investigating role of religiosity in decision making as many investors in India are extensive followers of religious dogma and adhere to ritualistic traditions during and before trading sessions too. Hence, suggested variable (SV$_1$), religiosity, has been identified as a research variable. Other extrinsic variables, social norms and culture are dropped out based on the rankings and qualitative assessments of the experts.

While collating the viewpoints, it is identified that mindfulness and consciousness are important qualitative constructs which assist an investor to handle emotional influxes and variations in financial rewards. Accordingly, among intrinsic variables, mindfulness and consciousness are conceptualized as possible antecedents of investor’s cognition and intuition.

Additionally, inconsistent findings are reported regarding the role of investor’s personality in shaping investor’s cognition and intuition. Such studies, specific to India, are also not very evident. The experts have also given personality a higher rank than other intrinsic variables.

Accordingly, we propose to investigate the role of personality, consciousness, mindfulness and religiosity on investor’s intuitive ability and cognitive capability and further on efficacy or performance.

There was a general consensus that gender, investment experience and age influences decision making efficacy. Though expert 1 and expert 2, with experience in the academic field, suggested to investigate moderating role of the demographic variables. Further, expert 1 and expert 4, with highest trading experience suggested incorporating investment horizon as a moderator. Their rationale is that in individual decision making, depending on the time period of investment, an investor may prefer deliberation over intuition for long term investment (or intuition over deliberation for short term investment) to achieve superior performance. Hence, suggested variable (SV$_2$), time-period of investment, has been identified as a research moderator.

Accordingly, these moderator relationships have also been conceptualized in the research framework. Figure 3.3 illustrates the proposed conceptual framework integrating the key constructs and moderators of the study. The key constructs of the conceptual framework are discussed, at length, in the section 3.3, where proposed hypothesis derived from the framework...
have been discussed. Before describing the key research variables in detail, the objectives of the study have been enlisted as under.

3.2. Objectives of the Study

- To assess the role of intuitive ability and cognitive capability on efficacy of stock market investors.
- To investigate the behavioral factors affecting intuitive ability and cognitive capability of stock market investors.
- To make recommendations to stock market investors in particular, and to other decision makers in general, the role of behavioral factors for enhancing the efficacy of their decision making.

**Figure 3.3: Proposed Research Framework: Behavioral Factors Affecting Intuitive Ability and Cognitive Capability of Stock Market Investors**

3.3. Hypotheses Framed as per the Conceptual Framework

3.3.1. Behavioral Antecedents of Intuitive Ability and Cognitive Capability

As stated earlier, four behavioral antecedents of investor’s intuitive ability and cognitive capability have been identified, which may have a plausible bearing on investor efficacy. They are: 1) Personality or Psychological Dispositions, 2) Consciousness Quotient, 3) Mindfulness and 4) Religiosity.
3.3.1.1 Psychological Dispositions\(^1\) (or Personality Types)

Personality has been interpreted as a set of characteristics that individuals generally exhibit. They are sum of distinctive ways in which an individual reacts to the stimuli and interacts with the environment. Extensive literature classifies personality or psychological dispositions into predominant factors or domains. Costa and McCrae (1992) identify five constructs of personality as conscientiousness, openness to experience, agreeableness, extraversion and neuroticism.

Existing literature regarding implications of personality on individual suggest that individual’s perception of the situation, to some extent, is subject to his/her personality. Witteman et al. (2009) argue that whether an investor prefers intuitive or cognitive processing is dependent on his/her psychological disposition. Individuals have separate personality traits for negative and positive affect in a context (Emmons and Diener, 1985; Costa and McCrae, 1992). Fenton-O’Creevy et al. (2004) document that emotionally stable introverts achieve superior trading performance. Borghans et al. (2008) theorize that profound knowledge of personality helps in assessing human inequality and supplement economic understanding.

Studies investigate personality as a possible driver of overconfidence. Overconfidence leads to unrealistic optimism in an investor wherein he/she is certain about his/her abilities and does not pay heed to the opinion of others (Chen et al., 2007), overestimates his/her knowledge and judgment regarding a decision context (Griffin and Tversky, 1992) and supposedly predicts favourable outcome with high probability (Cheng, 2007). Therefore, we hypothesize:

**Hypothesis 1: Psychological disposition influences intuitive ability of stock market investors.**

The role of personality constructs on individual’s predisposition or tendency towards cognitive biases (Pompian and Longo, 2004), and towards learning propensity or inclination (Zhang, 2003) has been supported. Pacini and Epstein (1999) found strong significant correlation between rationality and low neuroticism, openness to experience, and conscientiousness; and weak, yet significant relationship with extroversion. Lo et al. (2005) argued that traders with higher

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\(^1\) Psychological disposition and personality has been used interchangeably throughout the research
extroversion exhibit better performance while all other constructs of Big Five had negative correlation.

Personality significantly influences investor perception, intention, risk tolerance (Mayfield et al., 2008, Carducci and Wong, 1998) and risk propensity (Nicholson et al., 2005), where individuals with higher extroversion and openness, and with lower neuroticism, agreeableness, and conscientiousness exhibit higher risk propensity. Durand et al. (2008) argues that investors higher on negative emotion, risk taking propensity and openness to experience are risk-seekers or built a portfolio with higher risk. While Hunter and Kemp (2004) posit that investors with high openness to experience are risk takers and invest in risky companies. Therefore, we hypothesize:

Hypothesis 2: Psychological disposition influences cognitive capability of stock market investors.

3.3.1.2 Consciousness Quotient

Consciousness is the subjective qualia or experience of an individual. It is the state of awareness or being conscious. Brazdau (2008) introduced the concept of the consciousness quotient (CQ) theory and the CQ inventory. He defined CQ as the level of consciousness (or the level of being conscious) that is experienced in the morning, ½-1 hour after we are awake, after a refreshing sleep, without being exposed to any significant stimulus: coffee, TV, radio, music, talking etc. (Brazdau, 2009). Brown and Ryan (2003) argue that consciousness embraces awareness and attention, alike; wherein attention recurrently pulls figures out of the ground of awareness, holding them focally for varying lengths of time.

Heightened awareness improves holistic informational processing and trigger intuitive or instinctive behavior to make quick or accurate decisions, often with imperfect data sets (Khumalo, 2009). Therefore, we hypothesize:

Hypothesis 3: Higher the consciousness quotient, higher the intuitive ability of the stock market investors.

Conversely, it has been established that focusing our attention assists in interrupting automated hindering responses or suppress interfering information (Moore and Malinowski, 2009). Brazdau
and Mihai (2011) provide positive casual correlations between consciousness and academic performance. Therefore, we hypothesize:

**Hypothesis 4: Higher the consciousness quotient, higher the cognitive capability of the stock market investors.**

### 3.3.1.3 Mindfulness

Mindfulness is explained as unprejudiced, non-elaborative awareness focused on the existent acknowledging experience of every thought, emotion or sensation occurring in the present moment (Jon Kabat-Zinn, 2006). Bishop et al. (2004) propositioned dual-component model of mindfulness with self-regulation of attention as the first component and orientation towards the current experiences as the second component. Mindfulness is the basically a fundamental attentional stance, frequently referred to as insight meditation. Mindfulness should not be considered as a thought-suppressing practice, rather the thoughts are the observable elements. Mindfulness-based-stress-reduction (MBSR) techniques train human brain to handle destructive and negative sentiments under stressful conditions (Davidson, 2000; Davidson and Irwin, 1999). Neuro-scientists report that meditation betters executive functioning (Zeidan et al., 2010). Therefore, we hypothesize:

**Hypothesis 5: Higher the mindfulness, higher the intuitive ability of the stock market investors.**

Extensive studies report that mindfulness stimulates physiological and neurological changes which comprehensively be defined as relaxation, anxiety diminution, intensified attention (Lazar et al., 2000), or attentional focus and reduction in distractions and ability to disrupt automatic reaction (Greenberg et al., 2012). MBSR techniques improve sustained attention, selective attention (Bishop et al., 2004), selective attentional performance and working memory capacity (Jensen et al., 2011) and reduce cognitive vulnerability during period of distress. Hence, it can be stated that meditation and related exercises improve neuro-cognitive abilities. Therefore, we hypothesize:

**Hypothesis 6: Higher the mindfulness, higher the cognitive capability of the stock market investors.**
3.3.1.4 Religiosity

Religiosity, also referred to as religiousness, is a composite socio-cultural expression which comprises of multiple characteristics of religious activities, acts of devoutness, commitment and faith. Religion is a deep-rooted aspect of culture with considerable influence on the social norms, acceptability and belief system on the societal level and individual’s value system, habits and attitude at the personal level. Religion outlines the established protocols and provides guidelines on social norms and practices (Schwab and Petersen, 1980). These religious doctrines also provide an unsaid rule book which guides an individual choice making behaviour (Schiffman and Kanuk, 1991). Religion and its dogma not only assists an individual in assessing the problems (Spilka and Schmidt, 1983), but also provides an emotional support during the entire phase of problem solving, with heightened support during difficult periods (Pargament and Hahn, 1986). Hence, it would not be incorrect to say that religion/ religiosity/religiousness play a key role in general problem-solving and decision making (Kaiser, 1991).

Vasconcelos (2009) propositions integrated decision making model based on religion-based framework to augment managerial decision making. He proposes that this model combines rational and non-rational decision-making process in an iterative mode and integrates religious principles to further refine intuitive ability of executives. Further, he posits that this religion integrated decision model complements decision making process in organisations. Fernando and Jackson (2006) argue that religion shapes assessment, judgment, emotions, and centers locus of reference around supreme, divine and transcendent reality. Analysing interviews of Sri Lankan business leaders of different religious affiliations, Fernando and Jackson (2006) identified that business leaders acknowledge that they adhere to religion-based workplace spirituality. Reliance on religious association assists their leadership style, emotional interplays, motivational qualities and decision making especially in times of distress. Therefore, we hypothesize:

**Hypothesis 7: Higher the religiosity, higher the intuitive ability of stock market investors.**

Studies have acknowledged negative correlation of religiosity and intelligence (Zuckerman et al., 2013; Lewis et al., 2011). They claim that religion and religious dogma supports rule-conforming behavior, which is unlike an analytical or intelligent person who generally questions the norms
and uses reasoning in evaluation. Thus, religious beliefs induce cognitive biases which hinder rational thinking (Hommel and Colzato, 2010). Religious behavior, though seemingly rational, is not essentially based on tenets of economic rationality or choice models (Bruce, 1993). Recent research indicates inverse correlation between religiosity and preference or tendency for analytic reasoning (Pennycook et al., 2014). In a solitary instance, Bertsch and Pesta (2009) consider intelligence quotient (IQ) as a proxy for cognitive capability and support positive relationship. Interestingly, Razmyar and Reeve (2013) suggest that experiential thinking is positively related to some aspects of religiosity. It is believed that pro-religion behavior is a proxy for risk aversion (Miller and Hoffman, 1995; Noussair et al., 2013), where Noussair et al. (2013) define religiousness based on church membership/attendance. Therefore, we hypothesize:

**Hypothesis 8**: Higher the religiosity, higher the cognitive capability of stock market investors.

### 3.3.2 Intuitive Ability and Cognitive Capability

#### 3.3.2.1 Intuitive Ability

As discussed earlier, intuition is defined as domain-related ability to take a decision instantaneously without analyzing and deliberating on the alternatives (Myers, 2002). Jung (1933) suggested intuition as some psychological stimuli communicated unconsciously. Intuition helps a decision maker to eliminate the precincts of analytical reasoning. Matzler et al. (2007) argue that in many complex decision contexts, no amount of data can substitute the benefit of experiential wisdom that supports gut feeling, inner voice or intuition.

Intuition or intuitive ability comprehends the available information set promptly and efficiently, which may otherwise be obstructed by formal cognitive processes (Dane and Pratt, 2007). In a complex multi-criterion, multi-objective, multi-alternative, time constraining situations, operating under bounded rationality, it is better to rely on one’s intuitive ability or gut feeling for the decision (Witteman et al., 2009; Wilson 2002). Therefore, we hypothesize:

**Hypothesis 9**: Higher the intuitive ability of stock market investors, higher the efficacy of stock market investors.
3.3.2.2 **Cognitive Capability**

Cognitive capability refers to brain-based mental computational skills of the decision maker that organize mental thinking pattern across situations. It systemizes operational and tactical strategies in a complex sequential decision-making process (Messick, 1978; Löfström, 2005) and includes mechanism related to learning, memory, attention to detail, motor skills, visual and spatial processing, executive functions and problem solving (Pascale, 2006). Cognitive thinking has been typified as slow, deliberative, computational, based on rules and processes (Hammond, 1987; Epstein, 1990, 2008; Evans, 2008; Hogarth, 2005) with emphasis on analytical thinking for selecting an alternative. Canas et al. (2003) assert that cognitive capability is fundamentally concerned with attentional focus. Miller (1987) views cognitive style as higher-order meta strategies that influence individual’s approach/ response to a situation. Extant literature on rationality highlights the significance and superior effectiveness of cognitive capability of decision maker (Acker, 2008; Payne et al., 2007). Therefore, we hypothesize:

**Hypothesis 10:** Higher the cognitive capability of stock market investors, higher the efficacy of stock market investors.

3.3.3. **Efficacy of stock market investors**

Efficacy of an investors can be defined as the ability to predict the price trends and anticipate any fluctuations correctly. Ideally, an investor can optimize the returns when he/she buys the share at low and sells at high. In this study, efficacy of investors has been studied as a composite of self-efficacy and post-facto performance.

1. **Self-efficacy** – Self-efficacy is understood as the decision maker’s belief in his/her abilities to restrict the effect of distracting variables and achieving the goal (Bandura, 1997). Hence, the concept of self-efficacy is rooted in the argument that behavioural choice are influenced by self-belief and confidence on capabilities.

2. **Post-facto performance** – Investment performance is usually assessed based on post-facto or real returns earned in the stock market. This can also be interpreted in the terms of average return on investment.
3.3.4. Moderator Relationships

Additionally, extensive review of the existing studies provides evidence of two intervening variables – gender and age – between intuitive and cognitive capability and behavioural antecedents. Similarly, evidence of two moderating variables – time-period of investment and experience – between intuitive and cognitive capability and efficacy of investors is also observed. Here, age, gender and investment experience are the demographic variables specific to an investor. While, time-period of investment, that is, investment horizon is specific to the financial decision choice. In the current research, these moderators have been also investigated to assess their role in the behavioural relationships being studied under decision making context. Figure 3.1 illustrates these moderator relationships pictorially between constructs. In the subsequent section, a review of the existing studies on the moderating variables is discussed.

3.3.4.1 Moderator relationship between psychological disposition and intuitive ability and cognitive capability

3.3.4.1.1 Gender

Using Costa and McCrae (1992) personality inventory, Durand et al. (2008) associate investor personality with the trading behavior and investment performance. The results of the study highlight that lesser masculine investors with higher extroversion prefer innovation and achieve superior portfolio performance. Pacini and Epstein (1999) argue that females have higher intuitive abilities compared to that of males. Similar findings are reported in the physiological study by Lieberman (2000), where women have higher estrogen hormone which makes them more instinctive than male colleagues. Therefore, we hypothesize:

Hypothesis 11: Gender of the investor influences the relationship between psychological disposition and investors’ intuitive ability.

In an empirical research, role of personality in different domain was investigated by Nicholson et al. (2005). They report that risk propensity is deeply embedded in personality with established relationship between age, gender and personality. Other gender split studies report that women dependence on financial advisors is more than that of men (Stinerock et al., 1991) or that gender has a moderating effect on cognitive performance according to personality type (Borg and
Stranahan, 2002) or women have better analytical abilities than their men counterparts (Hayes and Allinson, 1996; Kirton, 1994). Therefore, we hypothesize:

**Hypothesis 12: Gender of the investor influences the relationship between psychological disposition and investors’ cognitive capability.**

### 3.3.4.2 Moderator relationship between religiosity and intuitive ability and cognitive capability

#### 3.3.4.2.1 Gender

Delener (1994) argued influence of religion on consumer decision making due to its intransience status and noticeable manifestations on behavior. The findings of automobile purchase decision making behavior of US Catholic and Jewish households reveal variations in decisions as per religious affiliations, with non-religious Jewish households exhibiting higher tendency for jointly deciding the model than Catholic, where husbands dominated in model choice and wives in colour choice. Gender-split studies posit that gender roles induce changes in religiosity (Levin and Taylor, 1993) with black women displaying higher religiosity compared to black men (Jensen and Jensen, 1993) or higher gender differences visible in people with lower religiosity. Therefore, we hypothesize:

**Hypothesis 13: Gender of the investor influences the relationship between religiosity and investors’ intuitive ability.**

Delener (1994) suggest that pro-religious households have high dependency on religious dogma and are close-minded with authoritarian setup; while non-religious households have low dogmatic structure with non-authoritarian mindset. Gender-split physiological or biological studies suggest shielding aspect of religiosity in the time of duress (Tartaro et al., 2005), measured by blood pressure, is significantly different between the genders. This further influence rational processing. Miller and Hoffmann (1995) report that religiosity explains gender dissimilarities in risk preference. Therefore, we hypothesize:

**Hypothesis 14: Gender of the investor influences the relationship between religiosity and investors’ cognitive capability.**
3.3.4.2.2 Age

Age in a very significant variable studied extensively in financial decision-making literature. In an experimental financial decision-making game, Chen and Sun (2003) report that younger individuals have superior working memory capacity while older individuals follow satisficing strategy in decision choices, though both young and old prefer heuristics instead of computations. Other set of studies report that intuitive abilities increase with age (Bruner and Clinchy, 1966) and so does religiosity, which also increases with age with highest upsurge between 18-30 (Argue et al., 1999). Also, older generations are more devout and spiritual (Taylor et al., 2007). Therefore, we hypothesize:

**Hypothesis 15: Greater the age of investor, stronger the relationship between religiosity and intuitive ability**

Zuckerman et al. (2013) discuss negative relation of religiosity with intelligence which increases with age. It has been reported that in an event of duress, older people react more. Usually, this is accounted for by the effect of ageing brain (Mroczek and Almeida, 2004). Another contrary set of studies show that misunderstandings and fallacies of life are reduced with age (Fischbein and Schnarch, 1997) which improves analysis. Therefore, we hypothesize:

**Hypothesis 16: Greater the age of investor, stronger the relationship between religiosity and cognitive capability**

3.3.4.3 **Moderator relationship between intuitive ability and cognitive capability and efficacy of stock market investors**

There are two moderators – time-period or tenure of investment and years of experience which influence the relationship between investor efficacy and intuitive and cognitive capability. These have been discussed as under.

3.3.4.3.1 Time-period of investment

Multiple studies investigate horizon effect or tenure of investment as a driver of investor behaviour (Barberis, 2000). Wood and Zaichkowsky (2004) deliberate that investment horizon is a significant predictor of investment decisions and categorizes long-term investors as
conservative. Froot et al. (1992) advocate that investors rely on instincts and gut feeling in short-term investment decisions. Therefore, we hypothesize:

**Hypothesis 17: Time-period of investment influences the relationship between intuitive ability and efficacy of stock market investors**

However, Barberis (2000) argue that markets have sufficient long-term predictability even when controlled for uncertainty. Therefore, we hypothesize:

**Hypothesis 18: Time-period of investment influences the relationship between cognitive capability and efficacy of stock market investors**

3.3.4.3.2 Years of experience

Effect of investor’s experience in the same or related domain on financial decision making has been extensively investigated. Hershey and Wilson (1997) argue that training and previous decision-making experience improves performance. In an empirical study, Estes and Hosseini (1988) also support these findings and discuss that familiarity, relevant class room hours and prior experience in fundamental analysis of shares are significant drivers for success of decision making. Studies have also established positive causal relationship between decision maker’s instinctive behaviour and years of experience (Hogarth, 2001). These studies assert that intuitive decisions use knowledge acquired during previous working experience (Reber, 1993). Therefore, we hypothesize:

**Hypothesis 19: Longer the years of experience in the stock market, stronger the relationship between intuitive ability and efficacy of stock market investors**

Researches also explore the relationship between experience and analytical ability of decision makers. Cognitive schematics of naïve decision makers is less detailed or unified in including all the parameters as compared to the professionals with expertise (Borko and Livingston, 1989). Cohen and Kudryavtsev (2012) investigate investor rationality in portfolio construction and deliberate that experience in stock market influences portfolio selection. In a neuro-financial research, Vieito et al. (2015) mapped investor’s brain using EEG to establish that individuals’ use of diverse trading strategies is based on their individual trading experience. In another empirical
study, Hammond (1987) argued that experienced people have higher score on cognitive continuum scale. Therefore, we hypothesize:

**Hypothesis 20: Longer the years of experience in the stock market, stronger the relationship between cognitive capability and efficacy of stock market investors**

### 3.4. Concluding Remarks

The chapter presents the process of engaged scholarship of stakeholders followed in participative research model (Van De Ven, 2007) for identifying relevant behavioural variables in investment decision making. After due identification of the research variables, the proposed research framework following ambidextrous decision-making model is conceptualized, where intuition works in collaboration with cognition for improved investment performance. The variable conceptualization, their definitions, intra-relationships between the constructs and research hypotheses are explained in this chapter. The measurement scale used for each construct and the methodology adopted for verification of research hypotheses is discussed in the next chapter.