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THESIS

BEHAVIORAL FINANCE AND ETHNIC ENTREPRENEURSHIP INVESTMENT
SUCCESS: A MODERATED MEDIATION ROLES OF THE PM² METHODOLOGY

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LIST OF ABBREVIATIONS

APT	The Arbitrage Principles Theory
AVE	The Average Variance Extracted
BF	Behavioral Finance
BFT	Behavioral Finance Theories
CAPM	The Capital Asset Pricing Model
CPM	Critical Path Method
CR	Composite Reliability
CVI	Content Validity Index
CVR	Content Validity Ratio
d_ULS /d_G	The Unweighted and Geodesic Distances
EE	Ethnic Entrepreneurship
EEIS	Ethnic Entrepreneurship Investment Success
EEs	Ethnic Entrepreneurs
EF	Environmental Factor
EFA	Exploratory Factor Analysis
EMH	The Efficient Market Hypothesis
f ²	The Effect Sizes
FL	Financial Literacy
HTMT	Heterotrait–Monotrait
IE	International Entrepreneurship
IPMA	International Project Management Association
KMO	Kaiser-Meyer-Olkin
MPT	The Modern Portfolio Theory
NFI	The Normed Fit Index
OPT	The Option Pricing Theory
PERT	Program Evaluation and Review Technique
PfM	Portfolio Management
PgM	Program Management
PLS-SEM	Partial Least Squares Structural Equation Modeling
PM	Project Management

PM2	PM2 -Project Management Methodology
PMI	Project Management Institute
Q ²	Predictive Relevance
R ²	The Coefficient of Determination
SEM	Structural Equation Modeling
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized Root Mean Square Residual
TE	Transnational Entrepreneurship
VIF	Variance Inflation Factor
χ^2	Chi-square

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DEDICATION

I dedicate this work to my beloved family, whose unwavering love, support, and patience have made this journey possible. To my spouse, for your encouragement, understanding, and constant belief in me; to my children, for inspiring me every day with your curiosity and joy; and to my parents and siblings, for instilling in me the values of perseverance, learning, and resilience.

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SOMMAIRE DE LA THÈS

Cette thèse examine le comportement d'investissement et la réussite des entrepreneurs ethniques à travers une approche intégrée mobilisant la finance comportementale, la méthodologie de gestion de projet PM², la littératie financière et l'environnement des affaires. L'objectif principal est de mieux comprendre comment les biais cognitifs et les pratiques managériales influencent la prise de décision entrepreneuriale et la performance des projets d'investissement chez les entrepreneurs issus de minorités ethniques.

L'entrepreneuriat ethnique constitue aujourd'hui un champ d'étude essentiel, reflétant à la fois les opportunités et les défis auxquels sont confrontés les immigrants dans la création et la pérennisation de leurs entreprises dans les pays d'accueil. Alors que la littérature existante s'est largement concentrée sur les dimensions structurelles, culturelles ou institutionnelles de ce phénomène, peu d'études ont abordé les aspects cognitifs et méthodologiques de la décision entrepreneuriale. Cette recherche vise à combler cette lacune en analysant la manière dont les biais de la finance comportementale, tels que les heuristiques, la surconfiance ou l'aversion aux pertes, interagissent avec les compétences managériales, la littératie financière et les conditions environnementales pour influencer le succès entrepreneurial.

Une méthodologie mixte a été adoptée afin de combiner profondeur et portée analytique. La phase qualitative s'appuie sur des entretiens semi-directifs menés auprès d'entrepreneurs ethniques, permettant d'identifier les principaux facteurs comportementaux, sociaux et managériaux influençant la réussite des investissements. L'analyse de contenu a fait ressortir plusieurs thèmes récurrents, notamment le soutien familial, la satisfaction de la clientèle, les réseaux ethniques, le capital humain et les liens transnationaux. Ces résultats ont ensuite servi de base à la modélisation quantitative, assurant la cohérence conceptuelle entre les deux volets de la recherche.

La phase quantitative repose sur une analyse par modélisation en équations structurelles par moindres carrés partiels (PLS-SEM), réalisée à l'aide des logiciels SmartPLS et SPSS. Des procédures de bootstrap (5 000 rééchantillonnages) ont permis d'évaluer la significativité et la robustesse des relations entre les variables étudiées : finance comportementale, méthodologie PM², littératie financière, environnement des affaires et succès de l'investissement.

Les résultats montrent que les biais comportementaux exercent un effet négatif significatif sur la réussite des entrepreneurs ethniques, principalement à travers les effets des heuristiques et de la théorie des perspectives. Cependant, l'application de la méthodologie PM², notamment ses composantes « gestion agile » et « gestion de programme », joue un rôle médiateur et modérateur en atténuant les effets néfastes des biais cognitifs. De même, la littératie financière apparaît comme un facteur modérateur clé : ses dimensions de compétence, de professionnalisme et d'opportunité renforcent la capacité des entrepreneurs à prendre des décisions rationnelles et éclairées.

En revanche, l'environnement des affaires n'a pas démontré d'effet modérateur globalement significatif, bien que les facteurs écologiques aient exercé une influence notable, contrairement aux dimensions macroéconomiques et microéconomiques. Les variables démographiques, telles que le niveau d'éducation, la maîtrise linguistique et le statut de résidence, se sont également révélées déterminantes, influençant la manière dont les entrepreneurs perçoivent les risques et appliquent les principes de la méthodologie PM².

Dans l'ensemble, les résultats soulignent que la réussite des entrepreneurs ethniques ne dépend pas uniquement des conditions externes du marché ou du soutien institutionnel, mais aussi de mécanismes cognitifs internes, de pratiques managériales structurées et de capacités d'apprentissage individuel. L'intégration des approches de la finance comportementale et du management de projet PM² propose ainsi un cadre analytique novateur, alliant rigueur méthodologique et compréhension psychologique.

Cette recherche contribue à l'avancement théorique de l'entrepreneuriat ethnique et de la finance comportementale en proposant un modèle de médiation modérée, liant les biais cognitifs, les méthodologies de gestion et les résultats d'investissement. Sur le plan pratique, elle offre des recommandations concrètes aux décideurs publics, aux organismes d'accompagnement et aux entrepreneurs eux-mêmes, en soulignant la nécessité de formations ciblées en gestion de projet et en littératie financière pour renforcer la qualité des décisions et la résilience des entreprises issues de l'immigration.

Enfin, la thèse se conclut par une réflexion sur les limites de l'étude et les perspectives de recherche future. Elle appelle à des investigations longitudinales et interculturelles afin d'examiner l'évolution dynamique des facteurs comportementaux et méthodologiques dans différents contextes institutionnels et culturels.

THESIS SUMMARY

This thesis investigates the investment behavior and success of ethnic entrepreneurs through the integrated lenses of behavioral finance, project management methodology (PM²), financial literacy, and the business environment. The research aims to deepen the understanding of how cognitive biases and managerial practices influence entrepreneurial decision-making and performance among ethnic entrepreneurs operating in diverse socio-economic contexts.

Ethnic entrepreneurship has become a critical area of study in contemporary economies, reflecting both the opportunities and challenges faced by immigrants in establishing and sustaining businesses in host countries. While previous studies have examined structural and cultural factors affecting ethnic entrepreneurship, limited attention has been given to the cognitive and methodological dimensions of entrepreneurial decision-making. This study addresses this gap by exploring how behavioral finance biases—such as heuristics, overconfidence, and loss aversion—interact with managerial competencies, financial literacy, and environmental conditions to shape business outcomes.

A mixed methods research design was adopted to provide both depth and breadth in analysis. The qualitative phase employed semi-structured interviews with ethnic entrepreneurs to identify key behavioral, social, and managerial factors influencing investment success. Using conventional qualitative content analysis, themes such as family support, customer satisfaction, ethnic networks, human capital, and transnational ties emerged as central to entrepreneurial adaptation and sustainability. The qualitative insights informed the development of the quantitative model, ensuring theoretical and contextual alignment between the two research phases.

The quantitative phase utilized Partial Least Squares Structural Equation Modeling (PLS-SEM), supported by Smart PLS and SPSS software, to test the hypothesized relationships among behavioral finance, PM² methodology, financial literacy, business environment, and investment success. Bootstrapping procedures (5,000 resamples) were applied to assess path significance and model reliability.

The results revealed that behavioral finance biases exert a significant negative influence on the investment success of ethnic entrepreneurs, primarily through heuristics and prospect theory effects. However, the application of the PM² methodology—particularly its Agile and Program

Management components—was found to mediate and moderate this relationship, mitigating the adverse impact of cognitive biases. Similarly, financial literacy emerged as a critical moderating factor, with its dimensions of competency, professionalism, and opportunity enhancing entrepreneurs' ability to make rational and informed financial decisions.

Conversely, the business environment demonstrated limited overall moderating influence, though ecological factors (such as sustainability and community impact) showed a significant effect. Demographic variables such as education, language fluency, and residency status also played meaningful roles in shaping behavioral patterns and investment outcomes.

Collectively, the findings highlight that the success of ethnic entrepreneurs depends not only on external factors such as the market or institutional support but also on internal cognitive mechanisms, managerial methodologies, and learning capacities. The integration of PM² and behavioral finance perspectives provides a novel analytical framework, bridging methodological rigor with psychological insight.

This thesis contributes to the theoretical development of ethnic entrepreneurship and behavioral finance by proposing a moderated-mediation model that links cognitive biases, managerial methodology, and investment outcomes. Practically, the research offers actionable recommendations for policymakers, business support organizations, and entrepreneurs themselves—emphasizing the need for targeted training in project management and financial literacy to strengthen decision-making and resilience within immigrant business communities.

Finally, the study concludes with reflections on its limitations and avenues for future research. It calls for further longitudinal and cross-cultural investigations to explore the dynamic evolution of behavioral and methodological factors in ethnic entrepreneurship across varying institutional and cultural contexts.

INTRODUCTION

Almost every small business is started with the hope that it will one day grow into a large enterprise. Investors and small business owners know that the only way to achieve this goal is by delivering on their commitments and promises (Weber, Geneste, & Connell, 2015). Doing so requires effort, innovation, discipline, and structure to avoid wasting time and money. This means producing and selling high-quality products and providing exceptional services (Magretta, 2002; Wilson & Bates, 2005). It also involves the continuous optimization and improvement of business processes (Bos, 2023). Entrepreneurs, project managers (PM), and executive directors each play important roles on this path.

At the most fundamental level stands the entrepreneur. Entrepreneurship refers to an individual or a small group of partners who take an original approach to invest in and create a new business that operates through various projects (Lindgren & Packendorff, 2002). An aspiring entrepreneur actively pursues a particular venture and assumes the greatest amount of risk associated with it (Kadmiri, Yakoub, & Achelhi, 2021; Zaleskiewicz, Bernady, & Traczyk, 2020). Thus, if the project succeeds, the entrepreneur gains the most profit; if it fails, the entrepreneur bears the greatest loss.

Project management can greatly assist entrepreneurs and small business owners, especially in managing aspects such as product design, development and testing, advertising and marketing, accounting and payroll, customer service, and other essential processes. It has broad applications across many fields and is no longer limited to areas such as construction (Levy, 2018; Schwalbe, 2009). Project management is often described as a multidisciplinary approach (Steyn et al., 2016) that cuts across various domains, including engineering, construction, healthcare, information technology (IT), finance, economics, management, and the social sciences. Therefore, project management plays an important role in business success (Klaus-Rosińska & Iwko, 2021; Schwalbe, 2009), helping projects meet their objectives. When applied correctly, it can significantly enhance, refine, and strengthen business processes.

However, many entrepreneurs underestimate the power of project management in starting and developing a business throughout its life cycle. They often rely solely on their previous knowledge and experience (Callahan & Cassar, 1995; Simpson, Tuck, & Bellamy, 2004), making

decisions based on inaccurate information or trial and error. Many adhere to outdated principles and show little interest in modernizing work systems or improving management practices (Drucker, 2012; Tilley, 1999; Weinzimmer & Nystrom, 1996). According to Prosad et al. (2015), investors are often irrational in their decisions, and their investment behavior does not follow linear logic. They frequently make choices that result in losses, even when they are aware of the potential consequences.

Based on behavioral finance theories (BFT), investors' behaviors are often driven by their feelings and emotions rather than purely rational analysis. Behavioral finance (BF) is a field of study that explores how psychological and emotional factors influence financial and investment decisions. It challenges the traditional assumption that investors always act logically and make decisions solely to maximize returns. According to this theory, investors' behaviors, shaped by their perceptions, beliefs, and personal experiences, significantly affect their decision-making processes (Adam & Shauni, 2014). In particular, psychological biases such as overconfidence, loss aversion, and herd behavior, along with the behavioral consequences that stem from these biases, play a crucial role in shaping investors' judgments and actions. As a result, understanding behavioral finance helps explain why investors sometimes make inconsistent or irrational decisions, even when they are aware of the potential risks involved.

Field observations and preliminary discussions reveal that many entrepreneurs and small business owners are unaware that, due to human psychology and nature, we are prone to certain costly mistakes in investment and business establishment (Adams & Kommerstad, 2002; Smith, 2016). They are often unfamiliar with financial and investment theories, project management principles, standards, and methods (Garavan & Barra, 1994; Kerzner, 2017). Many also fail to recognize the interconnections between investment, entrepreneurship, and project management, viewing them as separate entities (Irani, 2010; Kozlov & Danchenok, 2014), although experts argue otherwise.

First, investment, entrepreneurship, and project management, despite being distinct in title and definition, are closely related. According to De Piante in the Project Management Institute (PMI), "projects must be understood as investments. It's not enough to say that a project is like an investment. A project is an investment, strictly speaking" (De Piante, 2014). Many investments take the form of projects (Strokov, 2014), and most projects are formed through investment.

Considering the project as an investment, we can identify that: (1) the asset is the project scope, (2) the price paid is the project cost, (3) the return is the presumed benefit of the project scope, and (4) the project bears the same risks as any other investment (De Piante, 2014).

Similarly, entrepreneurship and project management share numerous assumptions, concepts, and practices, even though they are often studied separately (Germain & Aubry, 2019). Both disciplines deal with time and duration, are driven by deadlines, and address the transition from project initiation to operation. Both also face the challenge of reinterpreting their processes as ongoing phenomena (Hjorth, Holt, & Steyaert, 2015; Sergi, 2012). Moreover, project management and entrepreneurship are grounded in strong mythological assumptions about the agency and intentionality of entrepreneurs and project managers—assumptions that should be challenged. Increasingly, both fields emphasize the importance of social contexts and collective action. They also face epistemological challenges in moving beyond a functionalist-positivist paradigm that overemphasizes tools, rationality, and efficiency (Konstantinou & Müller, 2016). Ultimately, creating a project or a venture involves organizing processes of innovation, engaging in everyday practices, and developing coherent narratives (Blomquist, Hällgren, Nilsson, & Söderholm, 2010; Drouin, Müller, & Sankaran, 2013).

Investment, entrepreneurship, and project management also complement one another (Lindgren & Packendorff, 2002). While an investment process can often be viewed as an ongoing project, project management relies on various practices, tools, and frameworks that shape and support this process. Convincing stakeholders, developing credible narratives, and securing legitimacy and resources are key responsibilities of project managers—tasks entrepreneurs are also familiar with. Project management may also help demystify the “heroic” image of the entrepreneur, as project managers constantly face constraints that require creative problem-solving and negotiation (Germain & Aubry, 2019).

The researcher’s main motivation, supported by an educational and professional background in entrepreneurship, finance, and project management, is to raise awareness among entrepreneurs and investors about the relationships among these three concepts, and to provide knowledge for effective decision-making in business creation, entrepreneurial project management, and operational management. In this regard, and to explain the research subject more precisely, several key points were taken into consideration.

First, a review of existing studies reveals that most similar research has focused on financial markets and stock trading, whereas real assets are equally important. Studies show that irrational decisions also occur in real asset investments, where entrepreneurs and small business owners are often involved (Allali, 2010; Brenner, Menzies, Dionne, & Filion, 2010; Mueller, 2005). These decisions are influenced by factors such as business environments (Demirguc-Kunt, Love, & Maksimovic, 2006; Zhou, 2007), peer influence and competition (Demirguc-Kunt, Love, & Maksimovic, 2006; Elo & Volovelsky, 2017), personal emotions (Brundin & Gustafsson, 2013), and others. Due to the diversity and scope of real asset investments and existing research gaps, this area warrants greater attention from researchers, experts, and policymakers.

Second, while prior studies often emphasize entrepreneurship in general, this research focuses on ethnic entrepreneurship, recognizing that ethnic entrepreneurs face unique challenges when establishing their businesses (Howell & Nanda, 2019; Rath & Schutjens, 2019). These challenges differ from those encountered by non-ethnic entrepreneurs. Although some studies have been conducted in North America, particularly in Canada, the issues and challenges of ethnic entrepreneurship remain relatively underexplored and less understood. There is often a misconception that the factors influencing the success and sustainability of ethnic entrepreneurs are identical to those affecting other (non-ethnic) businesses, although existing studies suggest otherwise (Rath & Schutjens, 2019). Therefore, this study investigates the factors contributing to the success of ethnic entrepreneurship in Canada, drawing on the rich theoretical foundations of entrepreneurship.

Furthermore, research shows that many ethnic entrepreneurs in countries such as Canada do not begin their ventures with clear investment intentions (Allali, 2010; Robichaud, 1999), even when immigration plans were investment-based. Ethnic entrepreneurs and immigrant investors often have multiple motivations for starting small businesses in host countries. Some do so to overcome unemployment or job market barriers, while others seek independence, utilize experience from their home countries, or pursue financial and non-financial goals (Allali, 2010; Menzies et al., 2003; Robichaud, 1999). As the researcher is also an immigrant familiar with the challenges of ethnic entrepreneurship, the focus of this study is placed on this area.

Finally, considering the institutionalization of project management principles and the capabilities of methodologies such as PM², it is believed that such tools can play a vital role in

ethnic entrepreneurial project and operational management. Implementing a project management methodology like PM² can reduce entrepreneurs' error rates and increase the likelihood of success. PM² enables project managers, entrepreneurs, and business owners to deliver value and benefits to their organizations by effectively managing project lifecycles (European Commission, 2016). It is a lightweight, flexible methodology that can be tailored to specific needs. Developed through practical experience across European Union institutions, PM² is increasingly applied in diverse contexts. Therefore, one of the main objectives of this research is to investigate the moderating and mediating roles of Project Management Methodology in the relationship between independent and dependent variables.

RESEARCH DESIGN

Before addressing the main topics of this research, it is essential to present the research design. This helps clarify the scope of the study, the approach taken by the researcher, and the methods used to answer the research questions. In this regard, various frameworks for research design have been proposed (Creswell & Inquiry, 1998; Di Gregorio & Davidson, 2009; Williams, 2019). Among these, one of the most reliable and widely recognized is the research design developed by Maxwell (Maxwell, 2012; Yin, 2015). Accordingly, the design of this study has been developed by adapting Maxwell's model of research design.

As shown in Figure 1, the research design consists of eleven components. The first is the research background. It is the initial section of the research and establishes the context underlying the study. The research background includes the rationale, the key problem statement, and a brief overview of the research questions that are addressed in the rest of the paper. It introduces an unfamiliar audience to the research and its importance in a clear and logical manner. The second is the research problem(s) or knowledge gap. It represents a specific issue or challenge that the researcher seeks to investigate and address through the study. It also defines the aim, scope, and purpose of the research (Bell, Bryman, & Harley, 2022). The third is research motivation(s). Basically, research is conducted to identify problems or to find answers to uncertainties (Bamisile, 2019). This component also clarifies why the researcher intends to conduct the study. As can be seen in the figure, these three elements appear to serve as the inputs of the research design.

The fourth item is the research question(s). This refers to a specific inquiry that the research seeks to answer. It lies at the core of systematic investigation and helps the researcher clearly define a path for the research process (Center, 2018). The research questions focus the study, determine the methodology and hypotheses, and guide all stages of inquiry, analysis, and reporting. The fifth item is the research goal. It describes what the research project intends to accomplish (Scribb, 2023). The research goal guides every step of the research process, including how the researcher collects data, builds the argument, and develops the conclusions. The sixth is the research conceptual framework. The conceptual framework serves as a tool that explains the key concepts or variables and the relationships between them that need to be studied. It also provides a clear understanding of the phenomenon under investigation as well as the research questions and hypotheses (Antonenko, 2015; Ngulube, Mathipa, & Gumbo, 2015). It guides the research methodology and approach, helps identify gaps in knowledge, and generates new interpretations.

The seventh component refers to the research methodology, or the means by which the research will address its questions. It encompasses the theoretical and philosophical foundations of the study, the research design, data collection methods, data analysis techniques, and the overall framework within which the research is conducted (Kothari, 2004; Taylor, Sinha & Ghoshal, 2008). The research methodology also provides a structure for how the study is planned, executed, and analyzed, and it guides researchers in making informed decisions about the most appropriate methods to use (Voxco, 2021). The eighth component concerns research credibility, that is, why people should believe in the study's findings. Research credibility is a measure of the truth value of the research, or whether the study's findings are correct and accurate (Williams & Morrow, 2009). To some extent, it relies on the credibility of both the researcher and the research methods employed. These last five items cover the core elements of the research design based on Maxwell's model.

The ninth component refers to research results or findings. This section describes what the researcher discovered through data analysis. Its primary purpose is to use the collected data to answer the research questions posed in the introduction, even when the findings challenge the initial hypotheses (JMU, 2023). The results section should also include other relevant discoveries, trends, or insights revealed through data analysis. The tenth component is the research's expected contribution. It refers to a novel and significant addition to a particular field of study that advances existing knowledge, theories, or practices (Hassan, 2023).

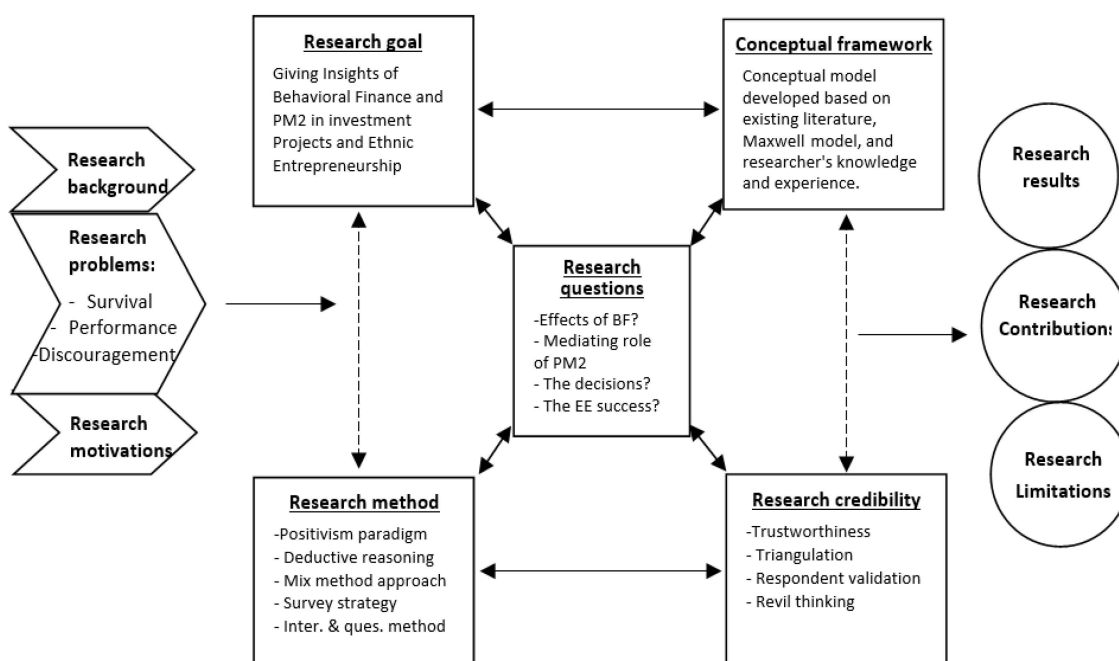


FIGURE 1. RESEARCH DESIGN MAP

Source: adapted from Maxwell, 2013

Finally, the last component refers to research limitations. These are, at the simplest level, the weaknesses or constraints of the study that arise from factors often beyond the researcher's control. Such factors may include time, funding, equipment, data access, participants, or other resources (Jansen & Phair, 2022).

RESEARCH STRUCTURE

This research consists of 7 chapters to cover all the components of the research design that introduced in the previous section. The first chapter defines the research problems and related matters like the research background, goals and objectives, the questions, the motivations, and the rationale of the study. The second chapter is literature review. It introduces the main theories used in the study including ethnic entrepreneurship, behavioural finance theory, and Project Management Methodology (PM₂). To this end, reliable sources, including books, articles, reference sources, reports, texts, audio and video, and everything that covers research literature, and try to explain, describe, define, and provide the background or theoretical framework for the research area are used.

The third and fourth chapters are developed out of the second chapter to concentrate, respectively, on the conceptual framework / hypothesis, and the methodology of the study. In chapter 3, the researcher presents conceptual framework and its components in different levels. It begins with a discussion of what constitutes the research conceptual framework. To this end, first, level 0 diagram, then level 1 are presented. The methodology (chapter 5) contains the research approach, paradigm, strategy, and method along with the statistical methods used. In this chapter, also, the research population and samples are presented.

The fifth chapter is dedicated to data analysis. In the first section of this chapter, the qualitative data extracted from the interviews are analyzed using the content analysis method. The second section analyzes the quantitative data collected through the questionnaire to examine the status of the variables, the relationships among, and accept/reject the hypotheses. For data analysing, various statistical techniques are used as well as tables and graphs to display the output and results. The sixth chapter discusses and explains the research findings in depth, and associates these with the existing findings in another studies and literature.

Finally, the seventh chapter concludes the research by summarizing its main findings, highlighting its main theoretical and practical contributions, limitations, and recommending suggestions for future research. Figure 2 illustrates the structure of the research in summary.

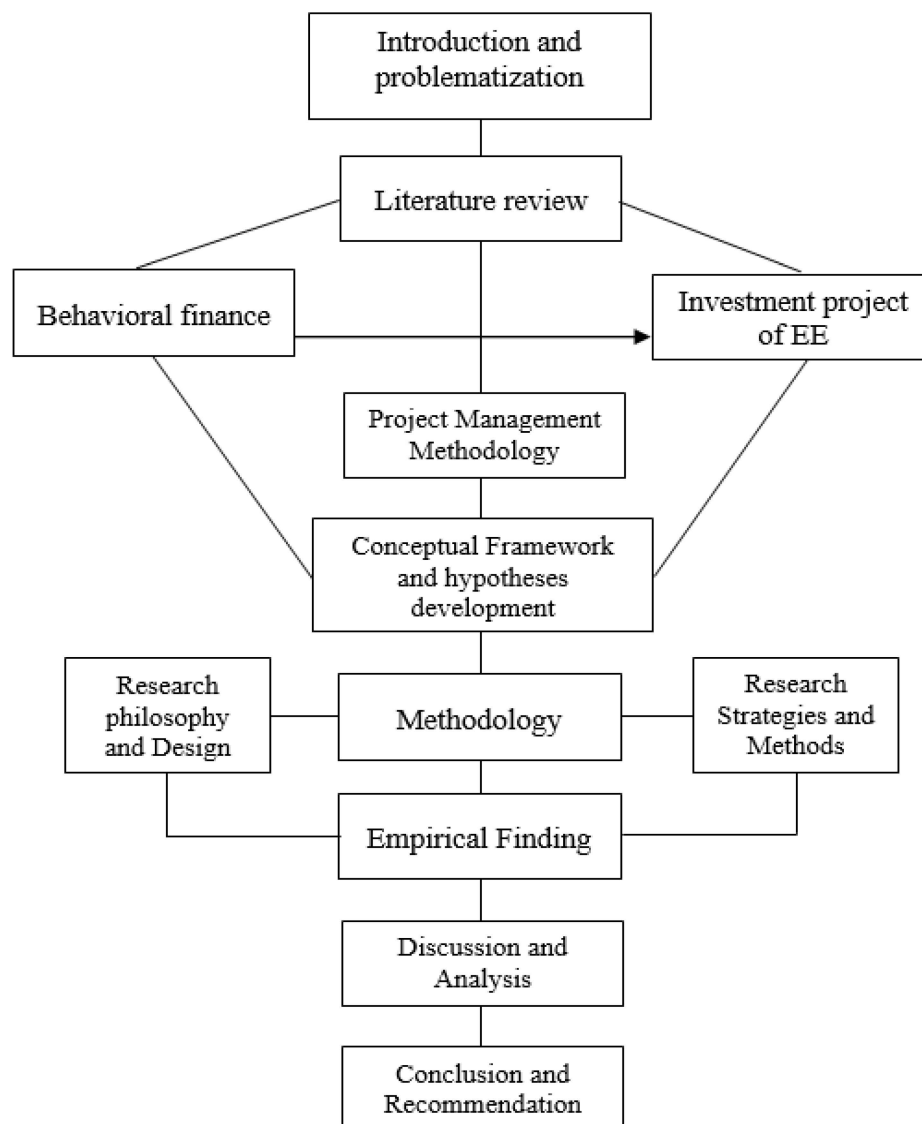


FIGURE 2. RESEARCH STRUCTURE

Source: the researcher

CHAPTER 1: RESEARCH CONTEXT- BACKGROUND, PROBLEM, AND KEY COMPONENTS

The first chapter introduces the key components of the study, establishing a solid foundation for the research that follows. It begins with an overview of the research background, positioning the study within a broader academic and practical context. The chapter then defines the research problem and outlines the study's goals and questions, thereby clarifying the focus and scope of the investigation. Furthermore, it discusses the motivations underlying the study and specifies the type of research undertaken. Collectively, these elements form a coherent framework that guides the subsequent chapters and supports the overall objectives of the thesis.

1.1. Research Background

Understanding the historical and theoretical roots of this research requires examining three interrelated streams of thought: behavioral finance (BF), ethnic entrepreneurship (EE), and PM² project management methodology. Although these fields evolved independently, their convergence provides a rich foundation for exploring how psychological, organizational, and contextual factors shape the investment success of ethnic entrepreneurs. While behavioral finance explains how individual cognition and emotion affect financial decisions, ethnic entrepreneurship contextualizes these behaviors within social and cultural realities. Project management methodology, particularly the European Commission's PM² framework, adds a structured approach that can moderate and mediate the influence of behavioral factors on entrepreneurial investment outcomes.

1.1.1. From rational to behavioral decision-making

The intellectual roots of behavioral finance lie in the long-standing debate between rational and psychological approaches to economic behavior. Classical economic theory, grounded in John Stuart Mill's (1844) notion of the "rational economic man," assumed that individuals make decisions to maximize utility under given constraints. This view dominated for decades and was formalized in traditional finance theories over the past fifty years (Köseoglu, 2019; Nofsinger,

2017). These models assumed investors act rationally, optimizing returns and minimizing risk based on complete information and consistent preferences.

However, empirical observations in the latter half of the twentieth century challenged this view. Economists and psychologists began to recognize that investors often act irrationally, influenced by emotions, heuristics, and cognitive biases (Salem, 2017). The emergence of behavioral finance in the 1970s and 1980s represented a paradigm shift, integrating insights from psychology and cognitive science into financial decision-making (Camerer, Loewenstein, & Rabin, 2004; Sewell, 2007).

The foundation of behavioral finance was strongly influenced by the work of Daniel Kahneman and Amos Tversky (1974), whose studies on judgment and decision-making demonstrated that people systematically deviate from rational models due to cognitive biases such as overconfidence, anchoring, and loss aversion. Their Prospect Theory (1979) became a cornerstone, showing that individuals evaluate gains and losses asymmetrically, an idea that revolutionized investment theory.

The cognitive revolution in psychology, beginning in the 1950s, also contributed to this shift. The information processing theory conceptualized the brain as a system that encodes, stores, and retrieves information (Lachman, Lachman, & Butterfield, 2015). This metaphor provided tools to study memory, reasoning, and decision-making scientifically. Bazerman and Moore (2012) later distinguished between intuitive and logical decision systems, emphasizing that while intuition is fast and emotional, reasoning is deliberate and effortful. Behavioral finance thus recognized that most investment decisions are intuitive rather than rational, shaped by bounded willpower, limited self-interest, and imperfect foresight (Thaler, 1999).

By the 1990s, behavioral finance had expanded to include both micro-level analyses (individual investor behavior) and macro-level implications (market inefficiencies). Researchers highlighted psychological and demographic influences, such as risk tolerance, social norms, and financial literacy, on investment behavior (Kourtidis, Šević, & Chatzoglou, 2011). Initially, studies focused on institutional investors (Barber & Odean, 2001), but over time, attention turned toward individual investors, who account for a significant share of economic activity (Senthil & Gopi, 2015; Warne, 2012). Empirical evidence shows that individuals often display irrational tendencies

such as overtrading, overconfidence, and susceptibility to social influence, leading to suboptimal outcomes (Benos, 1998; Wang, 2001).

This behavioral turn provides a powerful lens through which to examine entrepreneurial decision-making. Entrepreneurs, particularly small-scale or ethnic entrepreneurs, also invest under uncertainty, rely on intuition, and face bounded rationality, making behavioral finance directly applicable to understanding their investment success.

1.1.2. Behavioral finance meets ethnic entrepreneurship

Ethnic entrepreneurship represents a social and economic phenomenon deeply intertwined with migration, culture, and adaptation. While it has been formally studied for only a few decades, its roots stretch back centuries, as immigrant communities have long relied on self-employment and small businesses as vehicles for survival and advancement (Volery, 2007). Early sociological thinkers such as Simmel (1908), Weber (1930), and Schumpeter (1934) linked entrepreneurship to social structure, religious ethics, and innovation (Menzies et al., 2003). However, systematic study of ethnic entrepreneurship emerged after World War II, when large-scale migration reshaped labor markets in Europe and North America (Zhou, 2007).

The blocked mobility hypothesis (Waldinger, 1990) suggested that immigrants turned to entrepreneurship in response to labor market barriers. Over time, demand within ethnic enclaves for culturally specific goods and services, combined with shared networks and trust, facilitated the rise of ethnic businesses (Volery, 2007). Several frameworks have since been developed to explain these dynamics. The Enclave Theory (Sanders & Nee, 1987) focuses on geographically and socially bound markets; Middleman Theory (Zenner, 1991) examines intermediary trading roles; and Immigration Theories (Muller, 1994) highlight migration patterns and social capital.

Aldrich and Waldinger (1990) offered one of the most influential models, integrating structural, group, and strategic factors to explain how ethnic entrepreneurs access resources, mobilize networks, and develop market opportunities. Later works by Butler and Greene (1997) and Deakins (1999) emphasized community dimensions, social capital, and the importance of networks for success. Despite this progress, Rath and Kloosterman (1999) criticized the field for lacking integrative models that consider both structural and individual dimensions.

Behavioral finance offers a promising theoretical bridge here. Ethnic entrepreneurs, like individual investors, make decisions influenced by cognitive biases, emotions, and perceptions of risk. Their investment behaviors are shaped not only by market forces but also by cultural identity, migration experience, and social networks, factors that amplify or mitigate behavioral biases. For example, overconfidence, loss aversion, and optimism bias may manifest differently among ethnic entrepreneurs who face uncertain institutional environments or limited access to financial literacy resources. Thus, behavioral finance provides a psychological foundation to reinterpret ethnic entrepreneurship as a form of behavioral investing shaped by sociocultural context.

1.1.3. From behavioral bias to strategic control: the role of project management (PM²)

As entrepreneurship and investment decisions grow more complex, structured decision-making frameworks have become critical to improving success rates. Project management, as a field of practice and study, provides the tools and methodologies to translate behavioral intentions into systematic action. Its origins can be traced back to ancient civilizations, such as the construction of the Egyptian pyramids, the Great Wall of China and Persepolis in Iran, but it evolved into a scientific discipline during the 20th century.

The modern history of project management began with the works of Henry Gantt in the early 1900s, whose Gantt chart revolutionized task scheduling (Webster, 1999). The post-war period (1950s–1970s) saw the emergence of quantitative methods such as CPM (Critical Path Method) and PERT (Program Evaluation and Review Technique), which provided analytical tools for planning and control. By the 1980s, professional organizations such as the Project Management Institute (PMI) and the International Project Management Association (IPMA) had institutionalized best practices globally.

The 1990s and 2000s marked a shift toward flexible, adaptive methodologies like Agile and Lean, reflecting the increasing uncertainty and complexity of modern projects. Within this evolution, the European Commission's PM² methodology, initiated in 2007 and publicly released as Open PM² in 2016, emerged as a comprehensive, process-oriented framework integrating governance, stakeholder management, and performance control (European Commission, 2016).

Originally designed for IT projects, PM² was later expanded to all sectors, providing a practical, transparent, and collaborative structure for managing projects across European institutions.

In the context of this research, PM² represents more than a technical methodology; it serves as a behavioral regulator and decision-support system. By structuring processes, clarifying responsibilities, and embedding continuous evaluation, PM² can mitigate the negative effects of behavioral biases such as overconfidence or impulsive decision-making. For ethnic entrepreneurs, who often operate in uncertain and resource-constrained environments, adopting a structured project management framework can transform intuitive, emotion-driven investment decisions into systematic, goal-oriented actions, enhancing the likelihood of business success.

1.1.4. Integrating the three streams: toward a unified perspective

The historical evolution of behavioral finance, ethnic entrepreneurship, and project management reflects a gradual shift from purely rational models of economic behavior toward integrated frameworks that recognize the interplay of psychology, culture, and structure. Behavioral finance exposes the cognitive and emotional underpinnings of decision-making; ethnic entrepreneurship situates these decisions within the lived experiences of immigrant communities; and project management methodologies like PM² offer practical mechanisms to channel these behaviors toward successful outcomes.

Despite their rich individual histories, the intersection of these three domains remains underexplored. Previous studies have rarely examined how behavioral finance principles apply to the investment decisions of ethnic entrepreneurs, nor how structured management frameworks can moderate or mediate the behavioral and contextual factors influencing their performance. By synthesizing insights from these traditions, this research advances an interdisciplinary model explaining the investment success of ethnic entrepreneurs through the lens of behavioral finance and project management methodology.

In doing so, it contributes both theoretically and practically, linking the psychology of financial decision-making with the discipline of project execution, and situating both within the dynamic context of ethnic enterprise. This integrative perspective not only enriches academic understanding but also provides policymakers and practitioners with a grounded framework to

support the growth and sustainability of ethnic businesses in increasingly complex economic environments.

1.2. Research Problem Formulation

Entrepreneurship is a key driver of economic growth, innovation, and social integration worldwide. Within increasingly diverse societies, ethnic entrepreneurship has become a vital component of economic ecosystems, contributing to job creation, innovation, and cross-cultural exchange (Picot & Ostrovsky, 2021). Yet, despite their dynamism, ethnic entrepreneurs often face unique structural, financial, and behavioral constraints that differentiate their business outcomes from those of mainstream entrepreneurs. Traditional theories of entrepreneurial finance and investment assume rational decision-making based on complete information, but emerging research highlights that real-world entrepreneurs, particularly those operating under cultural and institutional constraints, frequently rely on heuristics, emotions, and cognitive shortcuts (Kahneman & Tversky, 1979; Hu, 2024). This shift from rationality to behavioral insight has given rise to behavioral finance, a framework explaining how cognitive biases and psychological factors influence financial behaviors. When applied to entrepreneurship, behavioral finance provides a nuanced understanding of why some ethnic entrepreneurs achieve investment success while others do not, even under similar market conditions (Ahmad, Akhtar, & Ur Rahman, 2025). Behavioral biases such as overconfidence, loss aversion, and anchoring may affect the strategic actions undertaken by ethnic entrepreneurs, which in turn influence the investment success of their ventures (Kariza, Chuah, & Arli, 2025).

However, the mere identification of behavioral biases offers limited practical guidance. Modern entrepreneurship increasingly requires structured frameworks to manage complexity and uncertainty. In this regard, the PM² Methodology, a standardized project management framework developed by the European Commission, offers a systematic approach to planning, governance, execution, and control of entrepreneurial projects (European Commission, 2018; PM² Alliance, 2023). PM² integrates best practices from traditional and agile management systems, enabling entrepreneurs to apply discipline and transparency to their projects. This structure can mitigate behavioral biases by embedding rational checkpoints into entrepreneurial actions, thus potentially enhancing investment success. Despite its relevance, empirical research examining how behavioral finance interacts with structured project management methodologies like PM² remains scarce.

Moreover, contextual and individual factors such as financial literacy, the ability to understand and effectively use financial information, and business environment, institutional, regulatory, and cultural support systems, may influence how effectively PM² operates as a behavioral corrective mechanism (Iram et al., 2023; Putri et al., 2025). The intersection of these constructs, behavioral finance, PM² methodology, financial literacy, and business environment, offers a novel perspective for explaining variations in ethnic entrepreneurship investment success (EEIS). Although this study collects empirical data from ethnic entrepreneurs in Québec, the theoretical focus and practical implications are framed to be relevant to ethnic entrepreneurship more broadly. The study seeks to provide insights into how cognitive, structural, and contextual factors combine to shape entrepreneurial investment success, offering a foundation for both theory development and practical guidance.

Existing scholarship on ethnic entrepreneurship has largely concentrated on external factors such as access to financing, institutional barriers, and cultural capital (Picot & Ostrovsky, 2021). Less attention has been given to internal behavioral dynamics, how entrepreneurs' cognitive and emotional tendencies influence investment outcomes. In contrast, behavioral finance has produced a robust body of evidence on investors' biases in capital markets (Ahmad, Akhtar, & Ur Rahman, 2025; Svoboda, 2022), but relatively little of this knowledge has been applied to entrepreneurial finance, especially in the ethnic entrepreneurship context (Kariza, Chuah, & Arli, 2025). Moreover, while project management frameworks such as PM², PRINCE2, and PMBOK are widely adopted in corporate and institutional environments, their application to entrepreneurial actions remains under-theorized (European Commission, 2018; PM² Alliance, 2023). The PM² methodology, through its governance structure, phase-based processes, and performance monitoring tools, could serve as a mechanism to channel behavioral tendencies into disciplined entrepreneurial actions. However, empirical validation of PM² as a moderated-mediation variable in the relationship between behavioral finance and investment success has yet to be established.

Further, while financial literacy has been consistently identified as a factor improving individual financial outcomes (Putri et al., 2025), its interaction with behavioral and methodological frameworks in entrepreneurship remains unclear. A financially literate entrepreneur may be better positioned to counteract biases and more likely to adopt structured methodologies effectively. Similarly, the business environment, including institutional, regulatory, and socio-cultural support, influences both the behavioral and methodological dimensions of

entrepreneurial outcomes. Environments that provide strong support networks, accessible financing, and policy stability tend to reinforce rational actions, whereas uncertain or discriminatory contexts may amplify behavioral distortions. Taken together, the literature reveals a threefold gap: first, limited integration of behavioral finance into the study of ethnic entrepreneurship investment success; second, insufficient exploration of PM² methodology as both a mediating and moderating variable in behavioral–entrepreneurial models; and third, lack of empirical examination of how financial literacy and business environment shape the behavioral-methodological relationship leading to investment success.

Behavioral finance, as the independent variable, examines how psychological biases, heuristics, and cognitive tendencies influence financial behaviors (Kahneman & Tversky, 1979; Hu, 2024). In ethnic entrepreneurship, these biases influence the actions undertaken by entrepreneurs, ultimately affecting investment success. Ethnic Entrepreneurship Investment Success (EEIS), the dependent variable, reflects the financial and strategic outcomes of ventures, including profitability, growth, and sustainability. PM² methodology serves as a moderated-mediation variable, offering structured processes, governance, and tools to enhance decision-making quality and implementation (European Commission, 2018; PM² Alliance, 2023). It may mediate the influence of behavioral finance by channeling tendencies into structured actions and moderate the relationship by strengthening or reducing behavioral effects depending on the rigor of its application. Financial literacy and business environment act as moderators, shaping both the behavioral and methodological dimensions of entrepreneurial success. Financial literacy enhances rational actions and supports effective implementation of methodologies such as PM² (Kurniasari, Wibowo, & Putri, 2025), while the business environment, including institutional supports and cultural openness, influences the strength and direction of BF and PM² effects on EEIS.

Despite extensive research on entrepreneurship and behavioral finance separately, an integrated understanding of how behavioral factors, methodological frameworks, and contextual moderators interact to influence ethnic entrepreneurship investment success remains absent. Existing studies often overlook how cognitive biases shape entrepreneurial actions and how structured project management approaches can mitigate their adverse effects. Furthermore, the interplay between behavioral finance and methodological frameworks such as PM² under varying levels of financial literacy and business environment support has not been empirically tested. Therefore, the central research problem of this study is: “how does behavioral finance influence

ethnic entrepreneurship investment success, and to what extent do PM² methodology, financial literacy, and business environment mediate or moderate this relationship?” Addressing this problem highlights the need for an integrative framework that captures behavioral, methodological, and contextual factors affecting EEIS, while naturally reflecting the role of entrepreneurial actions as the mechanism linking behavior to outcomes. Figure 3 shows the research problems in summary.

Building on this, the study addresses the following research questions:

1. To what extent does behavioral finance influence ethnic entrepreneurs’ investment success?
2. How does PM² methodology mediate and moderate the relationship between behavioral finance and investment success?
3. To what extent does financial literacy moderate the influence of behavioral finance on investment success?
4. How does the business environment moderate the relationships between behavioral finance and investment success?
5. How do demographic factors, such as age, gender, education, prior entrepreneurial experience, and cultural background, affect investment success and the effectiveness of behavioral and methodological mechanisms?

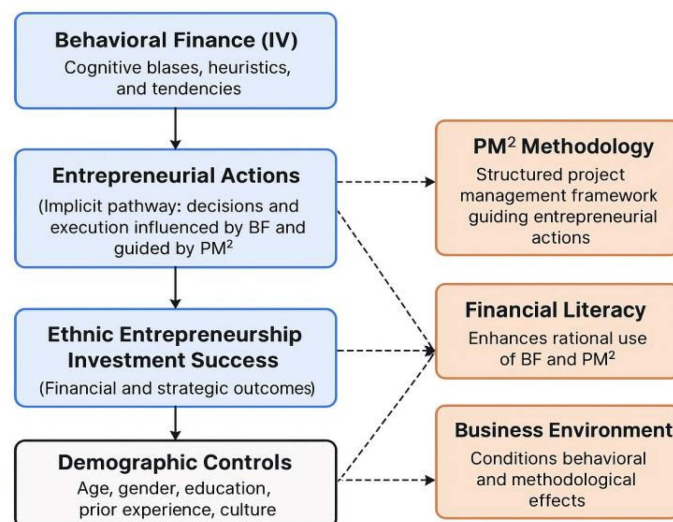


FIGURE 3. RESEARCH PROBLEMS

Source: the researcher

Figure 3 presents a conceptual model summarizing the research problem formulation, illustrating the relationships among behavioral finance, PM² methodology, financial literacy, business environment, demographic factors, and ethnic entrepreneurship investment success, as well as the implicit role of entrepreneurial actions as the mechanism linking behavioral tendencies to investment outcomes.

1.3. Research Purposes

The main purpose of this study is to investigate the complex interplay between behavioral finance, project management methodology, and the investment success of ethnic entrepreneurs. The study aims to examine how cognitive and behavioral tendencies influence entrepreneurial actions that ultimately determine Ethnic Entrepreneurship Investment Success (EEIS), and whether structured project management approaches, particularly the PM² methodology, can mediate and moderate these effects. In addition, the study explores the roles of financial literacy and the business environment as moderators, while accounting for demographic factors that may condition entrepreneurial outcomes. To achieve this main purpose, the study addresses the following sub-objectives:

1. To examine the direct influence of BF on ethnic entrepreneurs' investment success.
2. To investigate the moderated-mediation role of PM² methodology in the relationship between behavioral finance and investment success.
3. To analyze the moderating effect of financial literacy on the relationships between behavioral finance and ethnic entrepreneurship investment success.
4. To assess the moderating role of the business environment on the relationships between behavioral finance and EEIS.
5. To evaluate the influence of demographic factors, such as age, gender, education, prior entrepreneurial experience, and residency status, on EEs' investment success and the effectiveness of behavioral and methodological interventions.

By addressing these objectives, the study develops a comprehensive, interdisciplinary framework that integrates behavioral, managerial, and contextual factors to enhance theoretical understanding and provide practical guidance for improving investment outcomes among ethnic entrepreneurs.

1.4. Research Motivation

1.4.1. Theoretical motivation

Entrepreneurship plays a pivotal role in driving economic development, fostering innovation, and generating employment opportunities (Weber, Geneste, & Connell, 2015; OECD, 2019). Within this broader landscape, ethnic entrepreneurs (EEs) constitute a unique and dynamic segment, contributing significantly to both local and national economies. In Canada, for example, immigrant-owned businesses provide essential services, create jobs, and stimulate exports, while also enhancing social integration and cultural diversity (Anderson & Giberson, 2003; Blanchet, 2021; Government of Canada, 2021). Despite these contributions, EEs often encounter unique challenges, including structural barriers, cultural and institutional unfamiliarity, limited access to finance, and weaker networks (Safipour, Schopflocher, Higginbottom, & Emami, 2011; Branch, Huang, & Rivard, 2019; Temtime & Pansiri, 2004). These challenges, combined with the inherent uncertainty of entrepreneurship, create a pressing need to better understand the mechanisms that can enhance their investment success.

The motivation for this research stems from the recognition that addressing the challenges faced by ethnic entrepreneurs is not only a theoretical concern but also a matter of economic and social significance. While entrepreneurship research has extensively explored decision-making and project management in general, the specific intersection of behavioral finance, structured project management, and ethnic entrepreneurship remains underdeveloped (Camerer, Loewenstein, & Rabin, 2004; Bazerman & Moore, 2012). Understanding how cognitive and emotional biases influence investment decisions, and how interventions such as PM² methodology, financial literacy, and supportive business environments can mitigate these effects, holds substantial value. Such knowledge can directly inform policies, programs, and support mechanisms designed to improve entrepreneurial outcomes, particularly for populations facing structural disadvantages (Demirguc-Kunt, Love, & Maksimovic, 2006; Lusardi & Mitchell, 2014).

From a theoretical standpoint, this study is motivated by the need to bridge disciplinary gaps. Traditional finance and modern project management theories often assume rational decision-making, overlooking the psychological and behavioral realities that significantly shape entrepreneurial choices (Thaler, 1999; Salem, 2017). Behavioral finance provides a lens to capture these realities, but empirical research applying these principles to real asset investments among

ethnic entrepreneurs is limited (Allali, 2010; Mueller, 2005; Baird & Morrison, 2005). By integrating insights from behavioral finance with structured project management, financial literacy, and environmental factors, this research can contribute a more comprehensive framework for understanding investment success in ethnic entrepreneurship contexts. The motivation here is to produce a theoretically robust model that advances interdisciplinary understanding, combining psychology, management, and entrepreneurship research in a meaningful way.

The study is equally motivated by practical and societal implications. Improving investment success among ethnic entrepreneurs has direct economic benefits, including increased business sustainability, job creation, and enhanced contributions to GDP (Chittenden, Kauser, & Poutziouris, 2002; Baird & Morrison, 2005). It also has broader social implications, such as fostering the inclusion of immigrant communities, reducing barriers to economic participation, and promoting equitable access to entrepreneurial opportunities (Rath et al., 2011; Brenner et al., 2010). By identifying actionable factors, such as effective project management practices, targeted financial literacy initiatives, and supportive business environments, this research can provide tangible guidance for entrepreneurs, policymakers, and support organizations seeking to strengthen entrepreneurial ecosystems (European Commission, 2020; Management, 2016).

Another dimension of motivation arises from the dynamic nature of contemporary entrepreneurial environments. The interplay between behavioral biases, managerial practices, and external environmental factors is complex and context dependent. Ethnic entrepreneurs often face multiple, overlapping constraints that exacerbate the effects of cognitive biases, leading to inefficient resource allocation and suboptimal investment outcomes (Bazerman & Moore, 2012; Orozco, 2022). Investigating these relationships is crucial to developing interventions that are both context-sensitive and practically applicable. Moreover, demographic variables such as age, gender, education, prior experience, and residency status further influence decision-making, highlighting the need for nuanced and tailored strategies (Weber et al., 2015; Afroze et al., 2025).

In sum, the primary motivation for this research is to generate knowledge that is theoretically rigorous, empirically grounded, and socially meaningful. By exploring how behavioral finance interacts with structured project management and moderating factors such as financial literacy and business environment, this study aims to advance understanding of investment decision-making in ethnic entrepreneurship. The findings have the potential to inform policy, improve entrepreneurial

outcomes, and contribute to inclusive economic growth (Demirguc-Kunt et al., 2006; Lusardi & Mitchell, 2014). Ultimately, the research is driven by a commitment to enhancing the sustainability, performance, and resilience of ethnic entrepreneurial ventures, ensuring that these entrepreneurs can maximize both personal and societal benefits in increasingly complex and competitive business environments (Anderson & Giberson, 2003; Blanchet, 2021).

1.4.2. Personal Motivation

The motivation for conducting this study also stems from the researcher's academic and professional background, as well as direct exposure to the challenges faced by ethnic entrepreneurs in a multicultural context. The researcher's education and professional experience have been rooted in the fields of finance, entrepreneurship, and project management, three disciplines that, while traditionally studied separately, share strong conceptual and practical interconnections. The integration of these fields provides an opportunity to fill a significant research gap by exploring how structured project management methodologies can complement behavioral finance insights to improve entrepreneurial investment outcomes.

In addition, the researcher's personal experience as an immigrant has facilitated close engagement with ethnic entrepreneurs who, despite their ambition and financial capacity, often express dissatisfaction with their business performance. Informal discussions and observations revealed that many ethnic entrepreneurs engage in real-asset investments without structured planning or prior intention. Their decisions frequently emerge from situational necessity, emotional motivation, or informal advice, rather than systematic analysis. This first-hand exposure reinforced the importance of investigating how behavioral biases, cognitive limitations, and managerial practices influence the success of entrepreneurial projects.

Canada, as one of the most culturally diverse nations in the world, provides an ideal context for this research. The country's multicultural environment, formed by centuries of immigration, offers a living laboratory for studying how cultural and demographic diversity shape investment behavior (Gallagher & Dennison, 1995). Cultural diversity influences not only values and beliefs but also economic and investment behavior (Ahammad & Lakshmana, 2016; Rana, Murtaza, Noor, & Rehman, 2011). Conducting this research in such a setting provides a unique opportunity

to analyze how cultural and demographic factors influence entrepreneurial investment decisions, an opportunity that would not exist in more culturally homogeneous societies.

Prior research indicates that demographic characteristics beyond gender, such as age, education, income level, and prior entrepreneurial experience, play an important role in investment behavior but have received limited attention (Albert & Duffy, 2012; Din et al., 2021; ul Abor n et al., 2017). For example, younger investors may exhibit greater risk tolerance due to longer time horizons, while individuals with higher income or financial literacy tend to make more confident and informed investment decisions. Recognizing these nuances has strengthened the motivation to examine how a broader set of demographic variables influences investment behavior among ethnic entrepreneurs.

Moreover, most prior studies have concentrated on the “hard” aspects of business, such as market demand, competition, pricing, and operational management, while giving less attention to the “soft” psychological and behavioral dimensions (Lussier, 1996; Chittenden, Kauser, & Poutziouris, 2002; França et al., 2014). This study emphasizes these soft aspects by examining how behavioral finance and structured project management interact to influence real-asset investment outcomes.

Finally, much of the behavioral finance literature focuses on financial markets, such as stock investments, where investor characteristics and decision contexts differ from those of ethnic entrepreneurs managing real assets. This study addresses this gap by exploring behavioral biases and managerial practices in real-asset investment decisions, thereby contributing to both theory and practice in entrepreneurship.

In sum, the combination of theoretical and personal motivations provides a comprehensive rationale for this research. The study seeks not only to advance academic understanding but also to generate practical guidance that can empower ethnic entrepreneurs to enhance decision-making, improve project performance, and achieve sustainable business growth in Canada’s multicultural and economically diverse environment.

1.5. Type of Study and Unit of Analysis

This research is exploratory in nature, aiming to investigate the effects of behavioral finance factors on the success of ethnic entrepreneurial projects within Canada. The study employs a

mixed-method approach, combining qualitative insights with quantitative analysis to gain a comprehensive understanding of the underlying decision-making processes. A survey strategy is adopted to collect primary data from ethnic entrepreneurs, while qualitative interviews provide contextual depth to interpret behavioral patterns. The research further examines the moderated–mediation role of the PM² project management methodology, assessing how structured project management practices interact with behavioral biases to influence investment outcomes. The unit of analysis is individual ethnic entrepreneurs who engage in real-asset investment projects, with attention to how PM², demographic characteristics, financial literacy, and the business environment moderate and mediate the relationship between behavioral factors and project success. This design allows the study to explore both the psychological and managerial determinants of investment performance in a real-world, multicultural context.

1.6. Summary of Chapter 1

Chapter 1 provides a comprehensive foundation for the present study by outlining the background, rationale, and framework for investigating the investment behavior and project success of ethnic entrepreneurs in Canada. The chapter begins with a research background (Section 1.1), highlighting the challenges and complexities inherent in entrepreneurship, particularly for ethnic entrepreneurs who operate in culturally and institutionally diverse environments. It emphasizes the limitations of traditional investment and project management theories in capturing the psychological, behavioral, and cognitive factors that influence entrepreneurial decision-making.

In Section 1.2, the research problem formulation is presented, identifying gaps in existing literature related to the influence of behavioral finance on real-asset investment decisions among ethnic entrepreneurs. The section further explains the underexplored roles of structured project management methodologies (PM²), financial literacy, business environment, and demographic factors in shaping investment success, thereby establishing the rationale for this study. This section and the research purposes (Section 1.3) build directly on the identified gaps, outlining the study's objectives to examine the effects of behavioral finance, the mediating–moderating role of PM², and the influence of moderating variables such as financial literacy and business environment on investment outcomes.

Section 1.4, Research Motivation, presents both the theoretical and personal motivations for this study. The theoretical motivation emphasizes the importance of integrating insights from behavioral finance, project management, and entrepreneurship to understand investment decision-making in real-asset contexts. The personal motivation highlights the researcher's academic background, professional experience, and first-hand exposure to ethnic entrepreneurs in Canada's multicultural setting, providing a unique perspective and justification for undertaking this research.

Finally, Section 1.5 outlines the type of study and unit of analysis, describing the research as exploratory, using a mixed-method approach with a survey strategy complemented by qualitative insights. The section specifies the unit of analysis as individual ethnic entrepreneurs, focusing on how behavioral finance factors, moderated and mediated by PM² and contextual variables, influence the success of their investment projects.

In summary, Chapter 1 establishes the theoretical, practical, and contextual foundations for this study, justifying the research focus, objectives, and methodological approach, and providing a coherent framework for the subsequent chapters.

1.7. Résumé du Chapitre 1

Le chapitre 1 établit une base complète pour la présente étude en exposant le contexte, la justification et le cadre d'analyse du comportement d'investissement et du succès des projets des entrepreneurs ethniques au Canada. Il débute par une présentation du contexte de recherche (section 1.1), qui met en évidence les défis et les complexités de l'entrepreneuriat, en particulier pour les entrepreneurs issus de minorités ethniques évoluant dans des environnements culturellement et institutionnellement diversifiés. Ce passage souligne les limites des théories traditionnelles de l'investissement et de la gestion de projet à saisir les dimensions psychologiques, comportementales et cognitives qui influencent la prise de décision entrepreneuriale.

Dans la section 1.2, la formulation du problème de recherche est présentée. Elle identifie les lacunes de la littérature existante concernant l'influence de la finance comportementale sur les décisions d'investissement en actifs réels des entrepreneurs ethniques. Cette section met également en lumière les rôles encore peu explorés des méthodologies structurées de gestion de projet (PM²), de la littérature financière, de l'environnement des affaires et des facteurs démographiques dans la réussite des investissements, posant ainsi la justification de cette étude. Cette section, ainsi que les

objectifs de recherche (section 1.3), s'appuient directement sur les lacunes identifiées pour définir les buts de l'étude : examiner les effets de la finance comportementale, le rôle médiateur et modérateur de PM², ainsi que l'influence de variables modératrices telles que la littératie financière et l'environnement des affaires sur les résultats des investissements.

La section 1.4, Motivation de la recherche, présente les motivations à la fois théoriques et personnelles. La motivation théorique met en avant l'importance d'intégrer les perspectives de la finance comportementale, de la gestion de projet et de l'entrepreneuriat pour mieux comprendre la prise de décision en matière d'investissement dans les actifs réels. La motivation personnelle souligne le parcours académique et professionnel du chercheur, ainsi que son expérience directe auprès des entrepreneurs ethniques dans le contexte multiculturel canadien, apportant ainsi une perspective unique et une justification solide à cette recherche.

Enfin, la section 1.5 décrit le type d'étude et l'unité d'analyse, en précisant qu'il s'agit d'une recherche exploratoire adoptant une approche mixte : une stratégie d'enquête quantitative complétée par des analyses qualitatives. L'unité d'analyse est constituée des entrepreneurs ethniques individuels, avec un accent sur la manière dont les facteurs de la finance comportementale — modulés et médiés par PM² et par des variables contextuelles — influencent la réussite de leurs projets d'investissement.

En résumé, le chapitre 1 établit les fondements théoriques, pratiques et contextuels de cette étude, en justifiant son orientation, ses objectifs et sa méthodologie, tout en proposant un cadre cohérent pour les chapitres suivants.

CHAPTER 2. LITERATURE REVIEW

The purpose of this chapter is to present a comprehensive review and critical synthesis of the existing body of knowledge relevant to the current research. Building on the foundations established in Chapter 1, this chapter explores the theoretical and empirical literature underpinning the main constructs of the study, Behavioral Finance (BF) as the independent variable, Project Management Methodology (PM²) as both a mediator and moderator, and Ethnic Entrepreneurs' Investment Success (EEIS) as the dependent variable. In addition, the roles of Financial Literacy (FL) and Business Environment (BE) as moderating variables are examined to understand their influence on the relationships among the core constructs.

The review aims to establish a solid theoretical foundation by examining the evolution of relevant theories, the interrelationships among constructs, and the gaps that this research intends to address. The literature is analyzed not only to summarize existing findings but also to critically evaluate their strengths, limitations, and applicability to the context of ethnic entrepreneurship, a domain where behavioral, managerial, and contextual dimensions converge.

Given that this study integrates concepts from ethnic entrepreneurship, behavioral science, and project management methodology, the chapter adopts a multidisciplinary approach. The first section provides an overview of the conceptual foundations of entrepreneurship and ethnic entrepreneurship, followed by an examination of theoretical frameworks relevant to the study, including traditional and behavioral finance theories and project management methodologies. Subsequent sections delve into each main construct in detail, Behavioral Finance, Project Management Methodology (PM²), and Ethnic Entrepreneurs' Investment Success, before addressing the moderating roles of Financial Literacy and Business Environment. The chapter concludes with an integrative discussion that synthesizes the reviewed literature, identifies research gaps, and justifies the need for developing a comprehensive conceptual model and hypotheses in Chapter 3.

In summary, this literature review seeks to: 1) Define and conceptualize the main constructs of the study, 2) Review and synthesize prior empirical and theoretical contributions, 3) Identify critical gaps in the current body of knowledge; and 4) Establish the theoretical and empirical basis for the proposed conceptual framework.

2.1. Conceptual Foundations of the Study

2.1.1. Entrepreneurship: concept and nature

Entrepreneurship¹ has long been recognized as a key driver of economic development, innovation, and social progress. Traditionally, entrepreneurship is defined as the process through which individuals identify opportunities, mobilize resources, and create value through the establishment or expansion of business ventures (Schumpeter, 2000; Drucker, 1985). Entrepreneurs are often viewed as agents of change who introduce new products, services, and processes, contributing to both economic dynamism and societal transformation (Rosca, 2020). Despite the diversity of definitions, most conceptualizations converge on several core elements: opportunity recognition, risk-taking, innovation, and value creation (Shane Et al., 2000).

Entrepreneurial behavior, however, is far from uniform. It is influenced by cognitive, psychological, and contextual factors that shape decision-making under uncertainty (Baron, 2004). Scholars have emphasized that entrepreneurship involves not only rational analysis but also intuition, creativity, and emotional judgment (Mitchell et al., 2002). This multidimensional nature

1. There is no consensus on what entrepreneurship is. However, the common point has been found in the definitions of entrepreneurship is the process of emergence. A group of researchers (Gartner, 2012; Hessels, 2008; Korsgaard & Anderson, 2011; Reynolds, 2007) believe, the notion of creation is a fundamental characteristic of entrepreneurship. The notion of creation is articulated in terms of value creation, creation of a new business, new organization, new market, or new product and service. Shane (2001) notes that these kinds of creation affect the entire domain of entrepreneurship. Some others have focused on opportunity at the heart of any entrepreneurial approach. Joseph Schumpeter, For instance, who is known as the father of entrepreneurship, sees opportunity as its central concept (Schumpeter, 2000). Shane and Venkataraman (2000) define entrepreneurship as a field that is concerned with the discovery and exploitation of profitable opportunities. They point out that the creation of activities is the result of a process of discovery, evaluation and exploitation of a given opportunity. Thus, the role of the entrepreneur is, summarized in his ability to judge the value of the opportunity, on the one hand, and to make the choice concerning exploiting it, on the other hand. This presupposes a specific ability of making decisions related to the exploitation of opportunity.

Other researchers have introduced the entrepreneurs and their characteristics instead of the definition. Baumol et al. (2007) define entrepreneur as “one who undertakes an enterprise, especially a contractor, acting as intermediary between capital and labor”. Furthermore, Hayes et al. (2025) knows an entrepreneur as “an individual who creates a new business, bearing most of the risks and enjoying most of the rewards”. Some authors (Chaurasia et al., 2022; Jaafar et al., 2014; Rusu et al., 2012; Sternberg, 2004) believes the foundational words that describe an entrepreneur are: “able, intelligent, skilled at organizing, exercises sound judgment, possess superior business talents, astute, influential, pilot of industrialism, manager, perceptive, foresighted, courageous, a leader in economic and moral progress, strong willed, unusually energetic, resolute, firm in temper, sticks to a course, daring, decisive in spite of uncertainty, mentally free, able to withstand opposition, self-centered, wants a private kingdom, seeks power, independent, wants to fight, wants to prove superiority, likes to create, seeks difficulty, visionary, active, and detached”. To understand the entrepreneur, some researchers have also addressed the opposite of these characteristics, which are not mentioned to avoid prolonging the discussion.

of entrepreneurship makes it a complex and dynamic field, requiring insights from economics, psychology, sociology, and management disciplines.

2.1.2. Ethnic entrepreneurship: related insights and knowledge

Although ethnic entrepreneurship is a relatively recent concept, it is supported by a substantial body of literature. Numerous sources, including articles, reviews, books, book chapters, research reports, and essays, have contributed to this field. The key insights and knowledge related to ethnic entrepreneurship are summarized in Table 1.

TABLE 1. KEY CONCEPTS IN ETHNIC ENTREPRENEURSHIP

Source: the researcher based on literature

Study	Title	Type of source
Volery, 2007)	Ethnic entrepreneurship: a theoretical framework	Handbook
Zhou, 2004)	Revisiting ethnic entrepreneurship: Convergencies, controversies, and conceptual advancements	Research article
Masurel et al., 2002)	Motivations and Performance Conditions for Ethnic Entrepreneurship	Research article
Ma, Zhao, Wang, & Lee, 2013)	An overview of contemporary ethnic entrepreneurship studies: themes and relationships	Research article
Adiguna, 2012)	Exploring transnational entrepreneurship: On the interface between international entrepreneurship and ethnic entrepreneurship	Doctoral dissertation
Chaganti & Greene, 2002	Who Are Ethnic Entrepreneurs? A Study of Entrepreneurs' Ethnic Involvement and Business Characteristics	Original article
Raimi, Panait, Gigauri, & Apostu, 2023	Thematic Review of Motivational Factors, Types of Uncertainty, and Entrepreneurship Strategies of Transitional Entrepreneurship among Ethnic Minorities, Immigrants, and Women Entrepreneurs	Article in Journal of Risk and Financial Management
Rahman, Ullah, & Thompson, 2018	Challenges and Issues facing Ethnic Minority Small Business Owners: The Scottish experience.	Research article
Brenner, Filion et al., 2006	Problems Encountered by Ethnic Entrepreneurs: A Comparative Analysis Across Five Ethnic Groups	Research article
Brenner et al., 2010	How Location and Ethnicity Affect Ethnic Entrepreneurs in Three Canadian Cities	Research Article
Assudani, 2009	Ethnic Entrepreneurship: The Distinct Role of Ties	Original article
Baycan-Levent, Masurel, & Nijkamp, 2006	Gender differences in ethnic entrepreneurship	Research article

2.1.3. Ethnic entrepreneurship: the definitions

Ethnic entrepreneurship, derived from the terms “entrepreneurship” and “ethnicity”, refers to a set of connections and regular patterns of interaction among individuals who share a common national background or migratory experience. Accordingly, an ethnic entrepreneur is typically viewed as the owner and manager of a business who identifies with a social group based on shared cultural characteristics (Achidi Ndofo & Priem, 2011). To establish and sustain their ventures, ethnic entrepreneurs often rely on social relationships within their ethnic community. Thus, the theoretical foundation of this phenomenon emphasizes patterns of social interaction, and most studies in this field focus on the role of the ethnic community.

As shown in Table 2, ethnic entrepreneurship has been defined in various ways. One of the most cited definitions describes it as *“a set of connections and regular patterns of interaction among people sharing common national background or migration experiences”* (Waldinger et al., 1990). Because theoretical explanations of ethnic entrepreneurship focus on these interaction patterns, the ethnic group itself remains the central unit of analysis in most research.

Several definitions have also been proposed for the term “ethnic group.” According to Yinger (1985), an ethnic group is *“a segment of a larger society whose members are thought, by themselves or others, to have common origin and to share important segments of a common culture and who, in addition, participate in shared activities in which the common origin and culture are significant ingredients.”*

An alternative term sometimes used is “immigrant entrepreneurs,” referring specifically to individuals who have migrated in recent decades. However, this term excludes members of ethnic minority groups who have lived in host countries for centuries, such as African Americans in the United States, Jews in Europe, or Indigenous peoples in various regions. The term “ethnic,” by contrast, encompasses both immigrant and long-established minority groups (Volery, 2007). Nevertheless, the term “immigrants¹” will be used hereafter when referring specifically to the early

1. The United Nations defines a “migrant” as a person who moves to a country other than that of his/her usual residence for a period of at least 12 months (Castles & Miller, 2009). Based on Statistic Canada (2022) “immigrant refers to a person who is, or who has ever been, a landed immigrant or permanent resident. Such a person has been granted the right to live in Canada permanently by immigration authorities. Immigrants who have obtained Canadian citizenship by naturalization are included in this group”. Simply put, “an immigrant is a person living in a country other than that of his or her birth. No matter if that person has taken the citizenship of the destination country,

stages of the ethnic entrepreneurship process, when an ethnic group is newly settled in a host society and its members can clearly be considered immigrants.

TABLE 2. DEFINITIONS ETHNIC ENTREPRENEURSHIP

Source: the researcher based on literature

Study	Definition
Carmichael, Drori, & Honig, (2010)	Entrepreneurial activities that involve individuals whose group membership is tied to a common cultural heritage or origin and are known to out-group members as having such traits
Rocky Adiguna & Syed Fuzail Habib Shah (2012)	Entrepreneurial activities that involve individuals whose group membership is tied to a common cultural heritage or origin and are known to out-group members as having such traits.
Carter & Ram, (2003)	An immigrant or ethnic entrepreneur can be defined as someone who identifies, assesses, and exploits opportunities through a business he or she starts, acquires, or inherits and that has tight relationships with an ethnic community they belong to.
Cruz & de Queiroz Falcão, (2020)	Defined as business-ownership by immigrant and ethnic-group members, which generally promotes ethnic economic mobility.
Valdez, (2003)	Ethnic entrepreneurship is loosely defined as business-ownership by immigrant and ethnic-group members
Zhou, (2004)	Ethnic entrepreneurs are often referred to as simultaneously owners and managers (or operators) of their own businesses, whose group membership is tied to a common cultural heritage or origin and is known to out-group members as having such traits; more importantly, they are intrinsically intertwined in particular social structures in which individual behavior, social relations, and economic transactions are constrained.
Sinkovics & Reuber, (2021)	The authors define migrant entrepreneurship as the entrepreneurial activity of foreign-born individuals in a country other than that of their birth.
Brzozowski, Cucculelli, & Surdej, (2017)	A foreign-born individual (and their children) who establishes a business in the host country and is likely to remain in the host country permanently
Valdez, (2008)	Ethnic entrepreneurship is essentially defined as business ownership among immigrants, ethnic group members or both.
Tamer Cavusgil, Dilek Zamantili Nayir, et al. (2011)	Ethnic entrepreneurs are people who start their own business often through an individual connection with former immigrants through a set of regular patterns of interaction with them.
Chaganti & Greene, (2002)	Ethnic entrepreneurship can be defined as “a set of connections and regular patterns of interaction among people sharing common national background or migration experiences”.
Elmassah, James, & Bacheer, (2022)	Ethnic entrepreneurs -also known as 'immigrant entrepreneurs'- start businesses in their countries of settlement and become 'self-employed' and introduce their products and services to far-off places. Put differently, EE is about businesses run by migrant communities.
Alexandre-Leclair, (2014)	Ethnic entrepreneurs are often referred to as simultaneously being owners and managers of their own businesses whose group membership is tied to a common cultural heritage or origin and is known to out-group members as having such traits; more importantly, they are intrinsically intertwined in particular social structures in which individual behaviour, social relations, and economic transactions are constrained.
Hossain, Ahmed, & Islam, (2022)	Ethnic entrepreneurship is known as business activities in a particular location undertaken by individuals from different cultural background to the indigenous population.
Allali, (2010)	EE can be defined as someone who identifies, assesses, and exploits opportunities through a business he or she starts, acquires or inherits and that has tight relationships with an ethnic community they belong to. So, ethnic entrepreneurship can be understood only in the perspective of its cultural or ethnic context.

served in its military, married a native, or has another status, he or she will forever be an international migrant” (Bolter, 2019). Thus, migration can be divided into two categories: temporary and permanent.

2.1.4. Characteristics and dynamics of ethnic entrepreneurship

Ethnic entrepreneurship represents a dynamic interaction between cultural identity, social networks, opportunity structures, and contextual adaptation. It captures how entrepreneurs from minority or immigrant backgrounds establish and grow businesses that reflect both economic ambitions and cultural heritage. Research emphasizes that ethnic entrepreneurs do not operate in isolation but are shaped by their embeddedness within social, cultural, and institutional systems (Light & Gold, 2020; Ram et al., 2022). Their entrepreneurial behavior is therefore influenced by unique socio-cultural characteristics and adaptive dynamics that distinguish them from mainstream entrepreneurs. The following subsections discuss the main dimensions of ethnic entrepreneurship, cultural identity and motivation, social networks and embeddedness, opportunity structures and market niches, human and cultural capital, adaptation and innovation, and challenges and resilience, to illustrate how these interconnected elements shape their entrepreneurial trajectories.

2.1.4.1. Cultural Identity and Motivation

EEs frequently view business ownership as a pathway to economic mobility, cultural preservation, and social autonomy. Cultural identity often influences business choices, for example through cultural products, ethnic foods, or family enterprises, and it encourages persistence in the face of market exclusion or systemic discrimination (Ram et al., 2017). Cultural norms also shape risk tolerance, family participation, succession strategies, and investment preferences, contributing to distinctive management styles and intergenerational dynamics (Wehmeier et al., 2023). Moreover, ethnic identity serves as a source of resilience and symbolic capital, reinforcing entrepreneurs' confidence and social belonging in challenging environments (Light & Gold, 2020). This research emphasizes that entrepreneurship among migrants and ethnic minorities is not merely a reaction to economic necessity but also a form of cultural expression and agency, allowing individuals to maintain cultural continuity while achieving socioeconomic advancement (Naudé et al., 2022). In many cases, entrepreneurship thus becomes a hybrid space where identity, tradition, and innovation intersect, enabling EEs to reinterpret their cultural background as a competitive advantage (Orozco, 2023).

2.1.4.2. Social Networks and Embeddedness

A central dynamic in ethnic entrepreneurship is the reliance on social capital, which operates as both a resource and a constraint. Bonding ties, close intra-ethnic relationships, provide trust,

informal financing, labor, and an initial customer base that supports business start-up and survival (Light & Gold, 2000). These dense, trust-based networks often compensate for limited access to formal financial institutions and mainstream markets, especially among newly arrived or marginalized communities. In contrast, bridging ties, connections beyond the ethnic group, facilitate market expansion, innovation, and access to diverse information and institutional resources (Zhou, 2004; Portes & Yiu, 2013). Successful ethnic entrepreneurs typically evolve from early dependence on bonding networks toward a strategic balance that includes bridging connections, allowing them to integrate into broader economic ecosystems while retaining cultural embeddedness.

Recent studies highlight that hybrid networks, which combine intra- and inter-ethnic relationships, enhance both innovation capacity and business resilience by exposing entrepreneurs to heterogeneous ideas and opportunities (Aldrich, 2021; Basu & Goswami, 2023). This hybridization process is increasingly facilitated by digital and transnational networking, enabling ethnic entrepreneurs to leverage cross-border social capital and maintain ties with home-country markets while operating in host economies (Solano et al., 2022; Dheer, 2024). Moreover, intergenerational entrepreneurship within ethnic communities often strengthens social capital through the transmission of business knowledge, values, and reputation, ensuring continuity and adaptation across generations (Ram, 2022). Thus, social networks remain a core structural and cultural asset that underpins the sustainability and competitiveness of ethnic enterprises in evolving market contexts.

2.1.4.3. Opportunity Structures and Market Niches

Ethnic entrepreneurship often emerges from a dual structure of opportunity and constraint, where both cultural advantage and systemic limitation shape entrepreneurial pathways. Market niches, such as ethnic cuisine, cultural goods, language-based services, and community-oriented retail, offer exploitable openings in which cultural familiarity and insider knowledge become distinct competitive assets (Waldinger et al., 1990; Orozco, 2021). These niches allow entrepreneurs to transform cultural capital into economic opportunity, meeting unmet demands both within and beyond their ethnic communities. However, structural barriers, including restricted credit access, institutional discrimination, licensing challenges, and language or credential constraints, continue to influence the types of sectors entered and the eventual scale of business

operations (Chaganti & Greene, 2002; Bagwell, 2018; Ram, 2023). Such limitations often push ethnic entrepreneurs toward low-entry-cost sectors with high labor intensity but limited growth potential.

Recent studies indicate that many immigrant entrepreneurs are increasingly overcoming these structural constraints through transnational entrepreneurship, using cross-border networks, digital platforms, and e-commerce to identify and exploit opportunities that transcend local enclave boundaries (Ndofor & Priem, 2022; Dabić et al., 2021; Elo et al., 2024). This shift reflects a growing capacity to combine local embeddedness with global connectivity, allowing entrepreneurs to diversify risk, access international supply chains, and engage diasporic consumer markets (Sequeira et al., 2022; Ram, 2023). Consequently, ethnic entrepreneurship today can no longer be understood solely in terms of enclave economics but rather as a multi-scalar phenomenon, anchored in local communities yet dynamically linked to global economic circuits.

2.1.4.4. Human and Cultural Capital

Ethnic entrepreneurs' success depends on a blend of human capital, including formal education, professional experience, and managerial skills, and cultural capital, such as language proficiency, knowledge of traditions, and reputation within the community (Zhou, 2004). Bilingualism and intercultural competence provide strategic advantages, enabling entrepreneurs to communicate effectively with diverse customer bases, navigate institutional requirements, and exploit culturally specific market knowledge (Aliaga-Isla & Rialp, 2013; Wang & Warn, 2023). However, gaps in host-country-specific skills, such as local regulatory knowledge, digital literacy, or advanced managerial expertise, can constrain business growth and scalability, particularly for first-generation entrepreneurs (Barberis et al., 2021; Ndofor & Priem, 2022). Intergenerational transmission of entrepreneurial knowledge and values remains a central mechanism within ethnic businesses, fostering continuity, trust, and culturally grounded decision-making (Rafiq et al., 2021). Studies show that second-generation entrepreneurs frequently integrate formal education with inherited cultural and social capital, enhancing strategic planning, innovation capacity, and international market engagement (Barberis et al., 2021; Dabić et al., 2021). In combination, human and cultural capital not only support operational efficiency but also enable ethnic entrepreneurs to transform cultural identity into a sustainable competitive advantage in niche and mainstream markets.

2.1.4.5. Adaptation, Innovation, and Hybridization

Ethnic entrepreneurs demonstrate a high degree of adaptability, constantly adjusting their business models, products, and practices to respond to changing market conditions, regulatory environments, and consumer preferences. This adaptive capacity often involves the creative recombination of cultural knowledge and business acumen, resulting in innovative offerings that appeal both to co-ethnic and mainstream markets (Light & Gold, 2020; Ram et al., 2022). Hybridization, blending elements from the entrepreneur's cultural background with local business norms or global trends, enables the development of distinctive value propositions, such as fusion cuisines, culturally inspired fashion, or tech-driven services tailored to specific communities. Digital technologies, transnational networks, and cross-cultural collaborations further accelerate innovation, allowing ethnic entrepreneurs to scale operations, access new markets, and remain competitive despite systemic barriers (Nijkamp et al., 2022; Dheer, 2018). This dynamic interplay of adaptation, innovation, and hybridization highlights the entrepreneurial agility and strategic creativity that distinguish ethnic enterprises, illustrating how cultural heritage can be leveraged as both a source of identity and a driver of economic opportunity.

2.1.4.6. Challenges and Resilience

Ethnic entrepreneurs frequently adopt adaptive strategies and hybrid business models to reconcile cultural authenticity with the demands of mainstream and global markets. Hybridization, manifested in fusion cuisine, ethnic fashion, culturally inspired services, or brand identity, enables entrepreneurs to expand beyond ethnic clientele while preserving cultural distinctiveness (Ram, 2017). This approach not only diversifies revenue streams but also promotes strategic innovation, as entrepreneurs combine traditional knowledge with contemporary business practices to appeal to broader consumer segments. In recent years, digital transformation has significantly amplified these dynamics, facilitating access to global diaspora markets and international supply chains through e-commerce, social media, and online marketing platforms (Vershina et al., 2022; Dheer, 2024). Empirical evidence demonstrates that digital adaptation not only mitigates structural constraints, such as limited physical market access or resource scarcity, but also enhances firm visibility, supports data-driven decision-making, and fosters innovative business models (Zhang & Chun, 2018; Ndofor & Priem, 2022). Consequently, hybridization and digitalization jointly

enable ethnic entrepreneurs to balance cultural preservation with market competitiveness, driving sustainability and long-term growth.

2.1.4.7. Ecosystem Interaction and Policy Implications

Recent literature emphasizes the critical role of the broader entrepreneurial ecosystem in shaping the performance and strategic orientation of ethnic enterprises. Components such as supportive financial institutions, culturally informed advisory services, mentorship programs, incubators, and networking platforms collectively influence access to resources, knowledge, and market opportunities (Naudé, 2023; Kuckertz et al., 2023; Dheer, 2024). Policies that promote inclusive financing, capacity-building, and culturally sensitive training not only strengthen bridging social capital but also enable ethnic entrepreneurs to scale operations beyond traditional enclave markets, fostering integration into broader economic systems. Scholars caution against viewing ethnic firms solely as survival-oriented or enclave-bound ventures; rather, with adequate institutional support and ecosystem engagement, these businesses can transition into innovation-driven, growth-oriented enterprises that contribute substantially to host-country economic development (Rafiq & Ballantyne, 2020; Vershinina et al., 2022). Furthermore, ecosystem-based interventions that combine mentorship, digital literacy programs, and regulatory facilitation can enhance entrepreneurial resilience, innovation capacity, and cross-border connectivity, highlighting the strategic importance of policy and institutional support in maximizing the potential of ethnic entrepreneurship (Ram et al., 2023; Le et al., 2021).

In overall, ethnic entrepreneurship is a multifaceted and evolving phenomenon shaped by cultural identity, social capital, opportunity structures, and adaptive innovation. The interplay of these characteristics determines both constraints and opportunities for growth. Understanding these dynamics provides a foundation for analyzing how behavioral finance, project management methodologies (such as PM²), financial literacy, and business environment variables interact to influence investment success, topics developed in subsequent sections and the conceptual framework in Chapter 3.

2.1.5. Challenges faced by ethnic entrepreneurs

Ethnic entrepreneurs face a variety of structural, cultural, and institutional challenges that differentiate their experiences from those of mainstream entrepreneurs. One major constraint is

cultural and social barriers, including language difficulties, differences in business norms, and experiences of discrimination or marginalization in the host country (Kloosterman & Rath, 2018; Volery, 2007). These barriers often limit the entrepreneur's ability to interact with formal institutions, negotiate contracts, or access high-value networks, which can hinder business expansion and innovation. Cultural expectations within the entrepreneur's community may also impose obligations that affect business decisions, such as employing family members or adhering to traditional norms, which can sometimes conflict with market-driven strategies (Aliaga-Isla & Rialp, 2013; Borkowski & Kulikowski, 2022).

Access to finance remains another critical challenge. Ethnic entrepreneurs frequently rely on informal financing mechanisms, such as community savings groups or family loans, due to limited access to conventional banking or credit markets (Bagwell, 2018; Chaganti & Greene, 2002). Even when formal financing is available, language barriers, lack of local credit history, and unfamiliarity with regulatory procedures can restrict capital acquisition and hinder firm scaling (Naudé, 2022). Microfinance programs and government-backed schemes can partially mitigate these challenges, but their reach is often limited and may not align with the specific cultural or operational practices of ethnic enterprises (Kuckertz et al., 2023; Dheer, 2024).

Social network limitations represent another structural constraint. While bonding networks provide trust and initial resources, overreliance on intra-ethnic networks can limit access to new knowledge, technologies, and larger customer bases (Zhou, 2004; Aldrich, 2021). Bridging networks, which extend beyond the ethnic community, are often harder to establish due to discrimination, cultural differences, or lack of familiarity with mainstream institutions (Caligiuri et al., 2021). Entrepreneurs who fail to develop bridging connections may experience slower growth, reduced innovation capacity, and limited market diversification (Rafiq & Ballantyne, 2020).

Finally, regulatory and institutional barriers play a significant role in shaping entrepreneurial outcomes. Licensing requirements, bureaucratic procedures, and compliance regulations in host countries can be particularly challenging for ethnic entrepreneurs unfamiliar with local systems (Ram et al., 2017; Ndofor & Priem, 2022). These institutional constraints may increase operational costs and limit formalization, forcing some entrepreneurs to operate partially in informal markets. Research emphasizes that resilience, resourcefulness, and strategic adaptation, often facilitated by

social capital and cultural knowledge, enable ethnic entrepreneurs to overcome these systemic barriers and sustain their businesses (Caligiuri et al., 2021; Dana et al., 2021).

2.1.6. Investment behaviors among ethnic entrepreneurs

Ethnic entrepreneurs' investment behaviors are shaped by a combination of cultural, social, and experiential factors, which influence risk perception, decision-making, and portfolio choices. Studies indicate that risk tolerance among ethnic entrepreneurs is often mediated by cultural norms and family expectations. First-generation entrepreneurs may adopt conservative investment strategies to ensure stability, preferring low-risk ventures or incremental growth, whereas second-generation entrepreneurs, with greater exposure to host-country financial knowledge, may pursue higher-risk, higher-return investments (Barberis et al., 2021; Naudé, 2022).

Decision-making patterns also differ due to cultural and social influences. Ethnic entrepreneurs frequently rely on collective consultation, involving family, community members, or ethnic associations in evaluating investment opportunities (Aliaga-Isla & Rialp, 2013; Volery, 2007). This communal approach can reduce uncertainty and leverage shared knowledge but may also slow decision-making or introduce bias toward culturally familiar ventures. Moreover, emotional and cognitive factors, such as overconfidence in familiar markets or anchoring to traditional business practices, can influence investment allocation, consistent with findings in behavioral finance research (Kahneman & Tversky, 1979; Borkowski & Kulikowski, 2022).

Ethnic entrepreneurs often show preferences for certain asset classes or sectors aligned with cultural expertise and perceived reliability. Common areas include ethnic food production, import/export of cultural goods, community services, and family-run retail operations, reflecting a combination of niche market exploitation and risk mitigation (Waldinger et al., 1990; Bagwell, 2018). Transnational investments and diaspora networks have become increasingly important, allowing entrepreneurs to diversify geographically while leveraging cultural and social capital for better returns (Ndofor & Priem, 2022; Ram et al., 2023).

Finally, financial literacy and prior entrepreneurial experience play a central role in shaping investment behavior. Entrepreneurs with higher levels of financial knowledge are better able to assess risk, evaluate project feasibility, and allocate resources strategically (Ngota, 2021; Le et al., 2021). Second-generation or more established entrepreneurs often combine inherited cultural

capital with formal financial training, enabling more complex investment strategies and innovation-driven growth (Barberis et al., 2021; Vershinina et al., 2022). Behavioral biases, such as overconfidence, loss aversion, or herd behavior, interact with these factors, highlighting the need to integrate behavioral finance perspectives when analyzing investment decisions among ethnic entrepreneurs (Kahneman & Tversky, 1979; Zhang & Chun, 2023).

In sum, investment behaviors among ethnic entrepreneurs are contextually embedded, shaped by the intersection of culture, family, social networks, prior experience, and access to resources. Understanding these patterns is essential for developing models that integrate behavioral finance, project management methodologies, and financial literacy, which will be explored in the subsequent sections and conceptual framework.

2.1.7 Ethnic entrepreneurs' investment success

Ethnic entrepreneurs pursue investment success not solely in terms of immediate financial returns, but also through sustainable growth, market resilience, innovative practices, and alignment with cultural and social objectives (Aliaga-Isla & Rialp, 2013; Rafiq & Ballantyne, 2020). Investment success in this context is multidimensional, encompassing profitability, business continuity, market expansion, social impact, and the ability to maintain cultural identity within commercial operations (Barberis et al., 2021; Naudé et al., 2022).

The pursuit of investment success is embedded in the broader socio-cultural and institutional environment. Cultural norms, family expectations, and community influence shape risk perception and investment priorities, while social networks provide access to information, finance, and market opportunities (Light & Gold, 2020; Ram et al., 2022). Similarly, human and cultural capital, including managerial expertise, education, and intercultural skills, affect entrepreneurs' ability to identify opportunities, evaluate risks, and allocate resources effectively (Zhou, 2004; Ngota et al., 2021).

Entrepreneurial investment outcomes are also affected by adaptive and strategic behaviors. Ethnic entrepreneurs often adopt hybrid business models, combine local embeddedness with global connections, and leverage digital platforms to enhance visibility, diversify markets, and manage operational complexity (Vershinina et al., 2022; Wang et al., 2023). Such strategies can improve both short-term performance and long-term sustainability, highlighting that investment

success is not merely an economic metric but a reflection of effective integration of behavioral, managerial, and contextual factors.

This conceptualization of investment success underscores the importance of examining the psychological and behavioral determinants of decision-making, particularly through the lens of behavioral finance, as well as the role of structured project management methodologies like PM², which together shape how ethnic entrepreneurs make investment decisions and achieve sustainable outcomes. While Chapter 2 lays the theoretical foundations, the conceptual model and hypotheses in Chapter 3 will operationalize these constructs and examine their interactions, positioning investment success as the key dependent variable in the study.

2.2. Theoretical Frameworks Relevant to the Study

An entrepreneur or investor is, fundamentally, a human being; therefore, entrepreneurial and investment decisions are always made by individuals who are considering potential investments. These individuals typically evaluate market conditions and the business environment before deciding whether to invest. However, studies (Copur, 2015; Kamoun & Ibenrissoul, 2022; Sattar, Toseef, & Sattar, 2020) show that many investment decisions are not entirely rational, as they are influenced by factors such as investor emotions, personality traits, market dynamics, and the business environment. In other words, investors are susceptible to various biases during the investment process. Given that these behaviors and psychological factors significantly affect market supply, demand, and prices, this research considers behavioral finance as an independent variable. Table 3 its essence of knowledge.

TABLE 3. KEY CONCEPTS IN BEHAVIORAL FINANCE

Source: the researcher based on literature

Study	Title	Type of source
Mohd Adil, Yogita Singh, and Mohd. Shamim Ansari (2021)	How financial literacy moderate the association between behaviour biases and investment decision?	Research article
Saba Amin and Syed Shahzaib Pirzada (2014)	Theory of Behavioral Finance and Its Application to Property Market: A Change in Paradigm	Review paper
YURI BIONDI and GIUSEPPE MARZO (2011)	Decision Making Using Behavioral Finance for Capital Budgeting	Book chapter

Continue Table 3. Key concepts in Behavioral Finance

Study	Title	Type of source
Suzaida Bakar, Amelia Ng Chui Yi (2016)	The Impact of Psychological Factors on Investors' Decision Making in Malaysian Stock Market: A Case of Klang Valley and Pahang	Research article
Alistair Byrne, and Mike Brooks (2008)	Behavioral Finance: Theories and Evidence	Review paper
Werner De Bondt. Rosa M. Mayoral. Eleuterio Vallelado (2013)	Behavioral decision-making in finance: An overview and assessment of selected research	Research article
Nerea Igoa Amunarriz (2017)	Behavioural finance: from a theoretical approach to empirical application	Research article
Jinesh Jain And Nidhi Walia (2019)	Evaluation of behavioral biases affecting investment decision making of individual equity investors by fuzzy analytic	Research paper
Assia Kamoune, Nafii Ibenrissoul (2022)	Traditional versus Behavioral Finance Theory	Review paper
Rohit Kishore (2019)	Theory of Behavioural Finance and its Application to Property Market: A Change in Paradigm	Review paper
Zeynep Copur (2015)	Handbook of Research on Behavioral Finance and Investment Strategies: Decision Making in the Financial Industry	Research article
Anuradha Samal and A K Das Mohapatra (2020)	Standard Finance and Behavioral Finance: A Study On It's Evolution and It's Present Status In India	Review paper
Muhammad Atif Sattar, M. Toseef, M. F. Sattar (2020)	Behavioral Finance Biases in Investment Decision Making	Research article
Hersh Shefrin Meir Statman (2011)	Behavioral Finance in the Financial Crisis: Market Efficiency, Minsky, and Keynes	Original article
Robbert J. Shiller (2003)	From efficient market theory to behavioral finance	Original paper

2.2.1. Traditional economic and financial theories

The evolution of finance theory can be divided into three periods (Figure 4): traditional finance until the 1950s, modern finance up to the 1990s, and behavioral finance over the last three decades (Statman, 2014; Sharma et al., 2022). Traditional finance, rooted in classical and neoclassical economics, assumes that decision-makers are rational, self-interested, and aim to maximize utility under constraints (Habibi, 2001; Mill, 1998). The expected utility theory formalizes rational choice under uncertainty, proposing that individuals select actions with the highest expected payoff (Harrison, 1994; Mongin, 1998). Similarly, the concept of homo-

economicus posits that market participants operate purely out of rational self-interest (Gluckman & Reed, 1997).

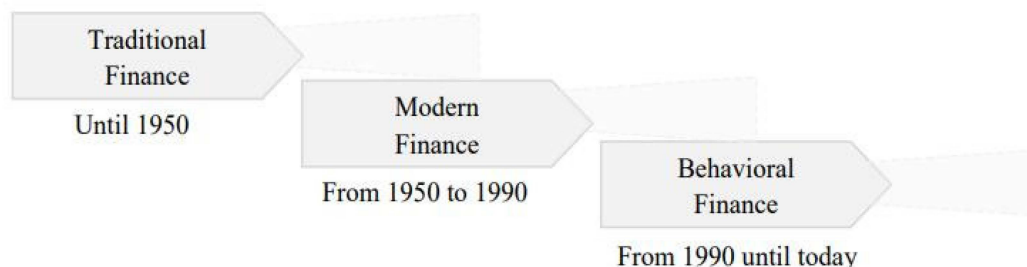


FIGURE 4. EVOLUTIONARY PROCESS OF FINANCE THEORY

Source: Pimenta & Fama, 2014

Building on these assumptions, traditional financial models such as arbitrage principles (AP), Efficient Market Hypothesis (EMH), Capital Asset Pricing Model (CAPM), and Option Pricing Theory (OPT) were developed to explain asset pricing, market efficiency, and investment behavior (Fama, 1970; Statman, 2014). Modern finance extended these ideas by incorporating rigorous mathematical modeling, methodological individualism, and the notion of risk-averse, analytically capable investors (Tarim, 2022; Sharma et al., 2022). EMH, in particular, posited that markets instantaneously reflect all available information, implying that prices are fair and arbitrage opportunities are minimal (Fama, 1970; Nair & Antony, 2015).

However, empirical studies challenged these assumptions, demonstrating that investors often deviate from rational behavior. For instance, under conditions of uncertainty, individuals exhibit loss aversion, risk-seeking in losses, and overreaction to unexpected news, as observed in the works of Kahneman and Tversky (1979) and De Bondt and Thaler (1985). These findings highlighted the limitations of traditional finance models and paved the way for behavioral finance, which integrates psychological and cognitive factors into investment decision-making.

2.2.2. Behavioral finance theory

2.2.2.1. Behavioral finance definitions

Behavioral finance (BF) emerged around the mid-20th century as a consequence of introducing psychology into economics (Brooks & Byrne, 2008). It is a branch of behavioral science that examines financial issues from a broader social scientific perspective, integrating

insights from cognitive science, experimental economics, behavioral economics, and psychology (Cuffee et al., 2012; Guzavicius, Vilkė, & Barkauskas, 2014; Ricciardi & Simon, 2000; Shiller, 1997). BF explains why and how individuals make seemingly irrational or illogical decisions when they spend, invest, save, or borrow money (Belsky & Gilovich, 1999; Ogunlusi & Obademi, 2021).

Extensive research, pioneered by Daniel Kahneman and Amos Tversky in the 1970s, revealed that the everyday heuristics or mental shortcuts people use under uncertainty are often non-optimal (Samaha, 2023). Kahneman and Tversky (1979) introduced prospect theory as a descriptive model of decision-making in risky situations, showing that outcomes are evaluated relative to a subjective reference point. Investors typically exhibit loss aversion, becoming risk-seeking in the face of losses and risk-averse in the face of gains. Together with heuristic theory, prospect theory forms the core theoretical framework of behavioral finance, challenging the assumptions of traditional utility-based finance models.

Behavioral finance is generally divided into two segments: micro-level behavioral finance (BFMI) and macro-level behavioral finance (BFMA) (Samal & Mohapatra, 2020). BFMI examines behavioral biases affecting individual investors' financial decisions, while BFMA focuses on market anomalies and irregularities, explaining deviations from the efficient market assumptions of traditional finance (Pompian, 2012). Proponents argue that awareness of psychological tendencies is essential for investment decision-making and the effective development of financial markets (Nawrocki & Viole, 2014; Shefrin, 2000).

The main components of BF include heuristics, cognitive biases, and prospect theory. Common behavioral patterns include overconfidence, optimism, anchoring, availability, representativeness, and herd behavior, which influence both strategic and financial decisions (Borkowski et al., 2022; Zhang et al., 2023). In entrepreneurial contexts, BF is particularly relevant because small business owners, including ethnic entrepreneurs, operate under uncertainty, limited information, and resource constraints. These tendencies can either hinder performance, through misjudged risk-taking or overreaction to market signals, or provide adaptive advantages when heuristics enable faster, experience-based decisions (Aliaga-Isla et al., 2013; Naudé et al., 2022).

Thus, behavioral finance provides a critical theoretical lens for understanding entrepreneurial investment behavior, particularly in ethnic entrepreneurship, where cultural norms, family influence, and social networks interact with cognitive and emotional factors. While this

section introduces behavioral finance at a conceptual level, the following section will explore in detail how heuristics, prospect theory, and behavioral biases specifically affect entrepreneurial investment decisions, highlighting both opportunities and constraints. For clarity and comparison, Table 4 presents a summary of prominent definitions of behavioral finance from various scholars, highlighting the evolving perspectives and key conceptual elements in the field.

TABLE 4. DEFINITIONS OF BEHAVIORAL FINANCE

Source: the researcher based on literature

Study	Definition
Merton & Samuelson, 1992	The study of how best to allocate and deploy resources across time in an uncertain environment and of the role of economic organizations in facilitating these allocations. Therefore, "time" and "lack of confidence" are two factors There are keys that influence financial behavior
Olsen, 1998	Behavioural finance seeks to understand and predict systematic financial market implications of psychological decision process.
Lintner, 1998	He has defined behavioural finance as being study of human interprets and acts on information to make informed investment decisions.
Kamoune & Ibenrissoul, 2022	Behavioral finance is a respectively new field that aims to join behavioral and cognitive psychological theory with conventional economics and finance to provide explanations for why people make suboptimal financial decisions.
Mullainathan & Thaler, 2000	The combination of psychology and economics that investigates what happens in markets in which some of the agents display human limitations and complications.
Camerer & Loewenstein, 2004	As a field centered around the core “conviction that increasing the realism of the psychological underpinnings of economic analysis will improve the field of economics on its own terms—generating theoretical insights making better predictions of field phenomena and suggesting better policy.
Kumar, 2017	Behavioral finance is a modern area of study in finance which aims to combine behavioral and cognitive psychological theory with conventional economics and finance to provide explanations for the reasons why people make irrational financial decisions.
Jamadori Gorganli Dojia et al.(2022)	Behavioral finance is a branch of behavioral science that examines financial issues from a wider social scientific point of view, considering psychology and sociology, as well as eliminating mere rational and logical frameworks.
Sangeeta Thakur (2009)	BF is the study of psychology and sociology on the behavior of the financial practitioners and their effect on the security market. It helps to understand why people buy or sell stock without doing fundamental analysis and behave irrationally in investment decisions.
Adam Hayes (2023)	BF is an area of study focused on how psychological influences can affect market outcomes. It can be analyzed to understand different outcomes across a variety of sectors and industries. One of the key aspects of behavioral finance studies is the influence of psychological biases.
J. Jain, N. Walia and S. Gupta (2019)	Behavioral finance is the study of how individuals analyze and interpret information to make informed investment decisions. In other words, behavioral finance seeks to influence the psychological processes in decision making.
ACCA (2023)	BF attempts to explain how decision makers take financial decisions in real life, and why their decisions might not appear to be rational every time and, therefore, have unpredictable consequences. This is contrasts with many traditional theories which assume investors make rational decisions.
Suzaida Bakar, Amelia Ng Chui Yi (2016)	Behavioral finance studies revealed that human beings do not behave. as rationally as economists suppose as their decisions at times are affected by their psychological feelings.

Continue Table 4. Definitions of behavioral finance

Study	Definition
Alistair Byrne, and Mike Brooks (2008)	Behavioral finance is based on the alternative notion that investors, or at least a significant minority of them, are subject to behavioral biases that mean their financial decisions can be less than fully rational. Evidence of these biases have typically come from cognitive psychology literature and has then been applied in a financial context.
ACCA (2023)	BF attempts to explain how decision makers take financial decisions in real life, and why their decisions might not appear to be rational every time and, therefore, have unpredictable consequences. This is contrasts with many traditional theories which assume investors make rational decisions.
Sewell (2012)	“Behavioral finance is the study of the influence of psychology on the behaviour of financial practitioners and the subsequent effect on markets. The science deals with theories and experiments focused on what happens when investors make decisions based on hunches or emotions.”

2.2.2.2. Behavioral Finance and investment Decisions

Behavioral finance provides a useful framework for understanding how psychological, social, and cultural factors influence entrepreneurial investment decisions (Aliaga-Isla & Rialp, 2013; Naudé et al., 2022). Entrepreneurs, especially those from ethnic minority backgrounds, often make decisions under uncertainty, limited resources, and complex market conditions, where traditional finance assumptions of perfect rationality do not hold (Borkowski & Kulikowski, 2022; Wang et al., 2025).

BF explains why entrepreneurs may deviate from purely rational decision-making models and how these deviations affect (Yazdipour , 2014; Adomdza et al., 2016):

- *Capital allocation:* Entrepreneurs’ choices and prioritization of investment projects may be influenced by personal experiences, social pressures, or perceived market opportunities rather than purely objective financial criteria.
- *Risk assessment and management:* Behavioral tendencies shape the perception of potential risks, influencing decisions on diversification, project continuation, or withdrawal.
- *Strategic planning:* Timing of market entry, scaling of operations, and adaptation to changing conditions may reflect cognitive and emotional biases, as well as cultural or social considerations.

Empirical research (Orozco, 2022; Angulo eta l., 2023) indicates that ethnic entrepreneurs often navigate unique environmental and social factors that interact with behavioral tendencies. For instance, reliance on family networks, cultural norms, or community expectations can influence investment preferences, project persistence, and resource mobilization (Naudé et al.,

2022; Ram, 2023). Moreover, entrepreneurs in minority or immigrant contexts may adopt adaptive decision strategies, balancing culturally informed approaches with market-driven considerations to optimize outcomes (Aliaga-Isla & Rialp, 2013; Zhang & Chun, 2023).

Behavioral finance also provides insights into why certain investments succeed or fail beyond purely financial indicators (Adomdza et al., 2016). By considering psychological and social influences, BF helps explain variations in entrepreneurial performance, decision-making speed, and the propensity to innovate under uncertainty (Sandhu et al., 2023). For EEs, this perspective is particularly valuable, as cultural identity, social networks, and prior experiences often shape not only what investments are made, but how they are managed and scaled.

Overall, integrating behavioral finance into the study of entrepreneurial investment offers a comprehensive lens to understand the complex interplay between cognition, emotion, and context, highlighting factors that traditional finance models may overlook. This framework lays the groundwork for examining mediating and moderating variables, such as project management practices, financial literacy, and the business environment, in shaping investment outcomes, a focus developed in later chapters.

Building on the behavioral finance perspective, it becomes evident that entrepreneurial decision-making is not only influenced by cognitive and emotional tendencies, but also by the structures and processes that guide project execution and resource management. While BF explains why entrepreneurs may deviate from purely rational investment decisions, the effectiveness of their choices often depends on how well these decisions are implemented and managed. This is where project management methodologies, particularly PM², play a critical role. PM² provides a structured framework for planning, monitoring, and controlling projects, enabling entrepreneurs to translate intentions into successful outcomes while mitigating the potential negative impacts of behavioral biases. In the context of ethnic entrepreneurship, combining insights from behavioral finance with formal project management practices allows for a more holistic understanding of investment success, highlighting the interaction between psychological tendencies, managerial processes, and environmental factors.

2.3. Project Management Methodology (PM²) as a Mediator and Moderator

2.3.1. Introduction to PM²

Project Management Methodology (PM²) is a comprehensive, structured project management framework developed by the European Commission to provide a standardized approach for planning, executing, and controlling projects (European Commission, 2020). PM² integrates governance, stakeholder management, planning, monitoring, and reporting into a cohesive methodology designed to ensure efficiency, accountability, and alignment with project objectives. Unlike traditional methodologies, PM² emphasizes adaptability, simplicity, and applicability across diverse organizational and cultural contexts, making it particularly suitable for entrepreneurial projects, which often face resource constraints, uncertain environments, and complex decision-making requirements (European Commission, 2016; Soto et al., 2023).

In essence, PM² provides both a theoretical and practical framework that guides project managers and entrepreneurs in structuring their activities, making informed decisions, and systematically achieving objectives. Its focus on clear roles, structured processes, and continuous oversight aligns closely with the needs of ethnic entrepreneurs, who must navigate not only economic and operational challenges but also cultural and social complexities.

2.3.2. PM² structure and principles

PM² is built on four interrelated dimensions, each of which can be conceptually defined as follows (European Commission, 2020):

1. **Governance:** Establishes a formal structure of roles, responsibilities, and decision-making authority. Governance ensures clarity, accountability, and alignment with project goals, allowing entrepreneurs to manage both strategic and operational tasks effectively.
2. **Stakeholder Engagement:** Refers to systematic identification, communication, and management of stakeholders. It ensures that team members, investors, clients, and external partners are aligned with project objectives, promoting collaboration, trust, and informed decision-making.

3. **Planning and Execution:** Involves defining project scope, scheduling activities, allocating resources, and assessing risks. It transforms strategic objectives into actionable steps, allowing entrepreneurs to prioritize tasks, anticipate challenges, and optimize resource use.
4. **Monitoring and Control:** Focuses on tracking project progress, performance metrics, and adherence to plans, enabling timely corrective actions. Continuous monitoring supports risk mitigation, quality assurance, and achievement of outcomes.

Together, these dimensions create a systematic yet flexible structure that supports ethnic entrepreneurs in managing uncertainty, balancing cultural and social constraints, and implementing investment decisions effectively. By combining governance, planning, and adaptive control, PM² provides both direction and flexibility, which are critical in dynamic entrepreneurial contexts.

2.3.3. Relevance of PM² to ethnic entrepreneurs and behavioral finance

PM² provides a structured framework that helps ethnic entrepreneurs translate intentions and behavioral tendencies into concrete project outcomes. Entrepreneurial investment decisions are often influenced by cognitive, emotional, and cultural factors, particularly under conditions of uncertainty, limited resources, and complex markets (Aliaga-Isla & Rialp, 2013; Borkowski & Kulikowski, 2022). By applying PM² principles, ethnic entrepreneurs can:

- **Reduce the influence of biases:** Structured planning and monitoring mitigate impulsive or emotionally driven decisions identified in behavioral finance.
- **Optimize resource allocation:** Clear governance and execution plans help prioritize investments and manage scarce financial and human resources.
- **Enhance strategic planning:** Stakeholder engagement and continuous oversight support informed timing of market entry, scaling operations, and adaptation to evolving conditions.
- **Navigate cultural and social dynamics:** PM² provides a flexible yet systematic approach to align family expectations, social networks, and cultural norms with business objectives (Naudé et al., 2022; Zhang & Chun, 2023).

In this sense, PM² functions as a bridge between behavioral tendencies and effective project execution, making it particularly relevant for ethnic entrepreneurs facing cultural, social, and operational challenges.

2.3.4. PM² as a mediator and moderator (theoretical perspective)

Theoretical and empirical literature suggests that PM² can act as both a mediator and a moderator in entrepreneurial investment decisions:

- **Mediator:** PM² converts behavioral tendencies into structured project actions, increasing the probability that investment decisions lead to successful outcomes. For example, an entrepreneur prone to overconfidence can benefit from PM² planning and monitoring mechanisms that enforce objective evaluation of risks and returns.
- **Moderator:** PM² buffers the negative effects of cognitive biases, cultural pressures, and social constraints, enhancing resilience, adaptability, and decision quality (Zhang & Chun, 2023; Naudé et al., 2022).

Despite the recognized potential, research gaps remain:

1. Limited studies focus on PM² in ethnic entrepreneurship contexts.
2. Interaction between behavioral tendencies and structured project management is underexplored.
3. Empirical evidence on PM²'s moderating role in mitigating biases and enhancing investment outcomes is scarce.

These gaps justify the inclusion of PM² in the proposed conceptual framework in Chapter 3, where its roles as mediator and moderator will be formally tested through hypotheses.

2.3.5. Project management schools: context for PM²

Project management theory encompasses multiple schools of thought (Figure 5), reflecting diverse perspectives on project governance, execution, and success (Bredillet, 2008; Crawford et al., 2005). Among these, three schools are particularly relevant to this research:

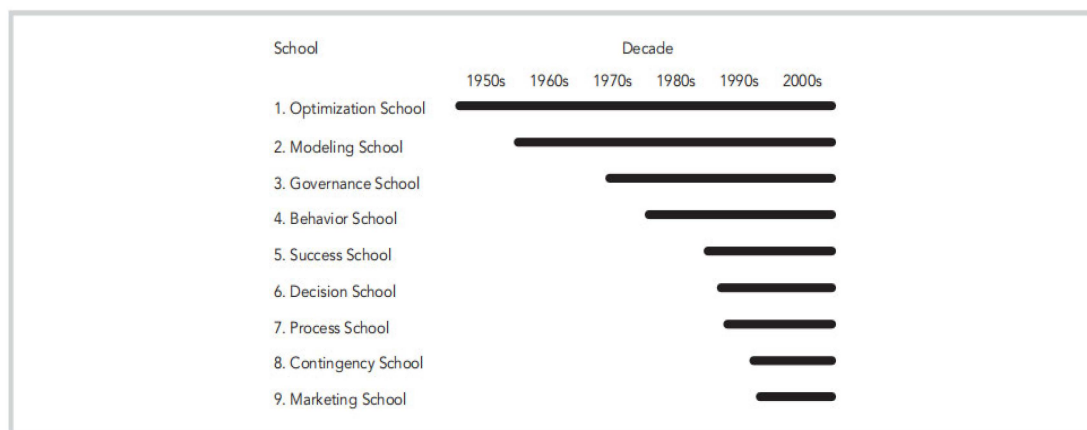


FIGURE 5. THE NINE SCHOOLS OF PROJECT MANAGEMENT THOUGHT

Sorce: Bredillet, 2008

- **Behavioral School:** Focuses on projects as social systems, emphasizing human behavior, leadership, team dynamics, and communication. This aligns with behavioral finance concepts, linking investor psychology to project management practices.
- **Success School:** Examines the factors and criteria that define project success, bridging theoretical understanding with tangible outcomes. In this study, it informs the measurement of investment project success.
- **Decision School:** Concentrates on the decision-making processes in projects, including initiation, financing, and resource allocation. This complements the behavioral perspective by highlighting how cognitive and cultural factors influence investment decisions.

By situating PM² within these schools, the study positions it as a structured, adaptable framework that integrates behavioral, success, and decision-oriented considerations, making it suitable for managing investment projects among ethnic entrepreneurs.

2.4. Moderating Factors: Financial Literacy and Business Environment

2.4.1. Financial literacy

Financial literacy represents an entrepreneur's ability to understand, interpret, and apply financial concepts in decision-making, including knowledge of budgeting, investment evaluation, risk management, and resource allocation (Huston, 2010; Lusardi & Mitchell, 2014). In the context of ethnic entrepreneurship, financial literacy plays a critical role in moderating the effects of

behavioral tendencies and cognitive biases on investment decisions. Entrepreneurs with higher financial knowledge are better equipped to evaluate opportunities, manage uncertainty, and optimize capital allocation, thereby enhancing the likelihood of investment success (Ngota et al., 2021; Le et al., 2021). While Chapter 2 introduces the theoretical relevance of financial literacy, its detailed operationalization and interaction with behavioral finance and PM² will be discussed in Chapter 3.

2.4.2. Business environment

The business environment encompasses institutional, regulatory, financial, and market conditions that influence entrepreneurial behavior and venture performance (North, 1990; Scott, 2013). For ethnic entrepreneurs, supportive environments, such as inclusive financial systems, mentorship programs, and culturally sensitive regulatory frameworks, can facilitate access to resources, expand market opportunities, and mitigate risks. Conversely, challenging conditions, including bureaucratic obstacles, market discrimination, or limited infrastructure, can constrain decision-making and growth potential (Kuckertz et al., 2023; Naudé, 2022). Understanding these contextual influences provides a theoretical backdrop for analyzing how behavioral finance and structured project management (PM²) interact with external conditions to shape investment outcomes, which will be explored in detail in Chapter 3.

2.5. Research Gaps

A systematic review of the literature highlights several gaps that this study aims to address, contributing both theoretically and empirically to the field of ethnic entrepreneurship. These gaps suggest new directions for research and underscore the novelty and relevance of the current study.

1. Psychological Dimensions in Ethnic Entrepreneurship: Most studies on ethnic entrepreneurship focus on economic or sociological aspects, such as ethnic networks, cultural norms, or enclave economics. While these perspectives are essential, they are insufficient for understanding entrepreneurial decision-making. There is a significant gap in examining the psychological and behavioral aspects of ethnic entrepreneurs, including how individual cognition, emotions, and behavioral tendencies influence investment decisions (Bates, 2012; Sarasvathy, 2001).

2. *Behavioral Finance in Real-Asset Investments:* Behavioral finance research has predominantly concentrated on financial and stock markets, leaving a gap in understanding its effects on real-asset investments. Limited studies investigate how cognitive biases, overconfidence, loss aversion, and other behavioral tendencies influence investments in tangible assets, such as real estate, commodities, businesses, or alternative assets. Addressing this gap is crucial for applying behavioral finance principles to ethnic entrepreneurs' investment behaviors.

3. *Project Management Applications in Ethnic Entrepreneurship:* Although project management frameworks are widely discussed in general business contexts, their application to investment projects within ethnic entrepreneurship is scarce. Existing literature primarily addresses general concepts, challenges, or success factors, without empirically analyzing structured project management methodologies. This research addresses this gap by investigating the role of PM² as a mediator and moderator between behavioral finance and investment project success.

4. *Integration of Investment and Project Management:* While investment and project management are closely related, they are often treated separately in research. A gap exists in conceptualizing investments as projects, with clearly defined success factors and management practices. This study bridges this gap by considering investment projects as structured initiatives that can benefit from project management approaches, particularly within ethnic entrepreneurship contexts.

5. *Demographic and Contextual Influences Beyond Gender:* Most prior studies on investment behavior focus on gender differences, leaving other demographic factors, such as age, education, income, prior experience, and cultural background, underexplored. This research incorporates a broader range of demographic variables, highlighting their influence on behavioral tendencies and investment outcomes.

6. *Behavioral Anomalies and Market Implications:* While individual investors' cognitive biases can generate anomalies in financial markets, existing research rarely connects these behaviors to real-asset investment outcomes. Understanding which behaviors produce specific anomalies and how they affect project and investment performance is an important gap that this study addresses.

7. Integration of Entrepreneurship, Behavioral Finance, and Project Management: Although entrepreneurship, investment, and project management share overlapping concepts and assumptions, few studies examine their interactions comprehensively. By combining these domains, this research provides a holistic framework for understanding how behavioral tendencies, structured management practices, and contextual factors jointly shape investment success in ethnic entrepreneurship.

By addressing these gaps, the current study lays the foundation for a comprehensive conceptual model, operationalized in Chapter 3, which integrates behavioral finance, PM² methodology, moderating factors such as financial literacy and business environment, and the multidimensional nature of investment success in ethnic entrepreneurship.

2.6. Chapter Summary

Chapter 2 provided the theoretical foundation for this study by examining key concepts and frameworks relevant to investment success among ethnic entrepreneurs. It began by exploring ethnic entrepreneurship, highlighting the role of cultural identity, social networks, opportunity structures, human and cultural capital, and adaptive strategies in shaping entrepreneurial behavior. The chapter emphasized that ethnic entrepreneurs operate within complex socio-cultural and institutional environments, where community influence, embeddedness, and resilience play central roles in business performance and investment decisions.

Next, the chapter discussed behavioral finance, explaining how cognitive and emotional biases, risk perception, and decision-making heuristics influence investment behavior. This section underscored the importance of understanding psychological and behavioral factors, especially when applied to real-asset investments, which are underexplored in the existing literature.

The theoretical discussion then moved to project management and PM², including an overview of project management schools and their relevance to investment projects. The behavioral, success, and decision schools were linked to the study's context, illustrating how structured project management can moderate and mediate the relationship between behavioral tendencies and investment outcomes.

The chapter also briefly introduced moderating factors, namely financial literacy and business environment, noting that while these were not detailed here, they are integral to the conceptual framework developed in Chapter 3.

Finally, a section on research gaps highlighted the theoretical and empirical limitations in the current literature, including the lack of focus on psychological aspects of ethnic entrepreneurship, behavioral finance in real-asset investments, project management applications, broader demographic considerations, behavioral anomalies, and the integrated study of entrepreneurship, finance, and project management. Addressing these gaps justifies the research design and lays the groundwork for the conceptual model and hypotheses presented in the next chapter.

In sum, Chapter 2 established a multidimensional understanding of the factors influencing investment success among ethnic entrepreneurs, providing a foundation for the development of the study's conceptual framework in Chapter 3.

2.7. Résumé du Chapitre

Le chapitre 2 a fourni les bases théoriques de cette étude en examinant les concepts et cadres clés pertinents pour le succès des investissements chez les entrepreneurs issus de minorités ethniques. Il a commencé par explorer l'entrepreneuriat ethnique, en mettant en évidence le rôle de l'identité culturelle, des réseaux sociaux, des structures d'opportunités, du capital humain et culturel, ainsi que des stratégies d'adaptation dans le comportement entrepreneurial. Le chapitre a souligné que les entrepreneurs ethniques évoluent dans des environnements socio-culturels et institutionnels complexes, où l'influence de la communauté, l'ancrage social et la résilience jouent un rôle central dans la performance de l'entreprise et les décisions d'investissement.

Ensuite, le chapitre a abordé la finance comportementale, en expliquant comment les biais cognitifs et émotionnels, la perception du risque et les heuristiques de décision influencent le comportement d'investissement. Cette section a mis en évidence l'importance de comprendre les facteurs psychologiques et comportementaux, en particulier lorsqu'ils s'appliquent aux investissements en actifs réels, qui sont peu étudiés dans la littérature existante.

La discussion théorique a ensuite porté sur la gestion de projet et la méthodologie PM², y compris un aperçu des écoles de pensée en gestion de projet et leur pertinence pour les projets

d'investissement. Les écoles comportementale, du succès et de la décision ont été reliées au contexte de l'étude, illustrant comment une gestion de projet structurée peut modérer et médiatiser la relation entre les tendances comportementales et les résultats des investissements.

Le chapitre a également présenté brièvement les facteurs modérateurs, à savoir la littératie financière et l'environnement des affaires, en précisant que bien qu'ils ne soient pas détaillés ici, ils sont essentiels au cadre conceptuel développé au chapitre 3.

Enfin, une section sur les lacunes de la recherche a mis en évidence les limitations théoriques et empiriques de la littérature actuelle, notamment le manque d'attention aux aspects psychologiques de l'entrepreneuriat ethnique, à l'application de la finance comportementale aux investissements en actifs réels, à l'utilisation de la gestion de projet, à la prise en compte des caractéristiques démographiques, aux anomalies comportementales et à l'étude intégrée de l'entrepreneuriat, de la finance et de la gestion de projet. La prise en compte de ces lacunes justifie la conception de cette recherche et prépare le terrain pour le modèle conceptuel et les hypothèses présentés dans le chapitre suivant.

En résumé, le chapitre 2 a établi une compréhension multidimensionnelle des facteurs influençant le succès des investissements chez les entrepreneurs ethniques, fournissant une base solide pour le développement du cadre conceptuel de l'étude au chapitre 3.

CHAPTER 3: RESEARCH PROPOSED MODEL AND HYPOTHESES DEVELOPMENT

Building upon the theoretical foundations and empirical insights presented in the preceding chapters, this chapter develops the research conceptual framework and formulates the hypotheses to be empirically tested. The purpose of this chapter is to translate the theoretical constructs and qualitative findings into a structured conceptual model¹ that explains the behavioral, managerial, and contextual determinants of Ethnic Entrepreneurs' Investment Success (EEIS). In doing so, the chapter integrates behavioral finance principles with project management competencies, financial literacy, and environmental factors to provide a multidimensional understanding of entrepreneurial decision-making and performance among ethnic entrepreneurs.

Ethnic entrepreneurship operates within complex social, economic, and institutional environments where entrepreneurs' decisions are shaped not only by rational analysis but also by cognitive, emotional, and contextual influences. Previous chapters demonstrated that Behavioral Finance (BF) provides a useful lens for examining how psychological heuristics, cognitive biases, and risk perceptions affect investment behavior and strategic decision-making. However, behavioral tendencies alone do not fully explain entrepreneurial outcomes; managerial capabilities, resource orchestration, and external conditions also play critical roles. Hence, this study proposes an integrated model that extends behavioral finance by incorporating PM² (Project, Program, and Portfolio Management) as a mediating–moderating mechanism that translates behavioral tendencies into structured investment and management practices.

In addition, the framework acknowledges that Financial Literacy (FL) and Business Environment (BE) exert significant moderating effects on the behavioral–managerial–performance nexus. Financial literacy enhances entrepreneurs' ability to interpret information, evaluate risks, and make informed financial decisions, thereby mitigating behavioral biases and improving investment outcomes. Similarly, the business environment, including macroeconomic, microeconomic, and ecological factors, creates opportunities and constraints that influence both

1. Conceptual model is a system of concepts, assumptions, expectations, beliefs, and theories (Maxwell, 2013) that supports and informs the research.

decision-making processes and the effectiveness of managerial interventions. Together, these moderating variables contextualize the model within the dynamic and uncertain conditions under which ethnic entrepreneurs operate.

Consistent with the mixed-methods design of this research, the conceptual framework is informed by two complementary sources of evidence. The first source derives from the qualitative phase, which employed semi-structured interviews with ethnic entrepreneurs to explore their lived experiences, behavioral tendencies, and decision-making processes in diverse business contexts. This exploratory phase enabled the identification of key constructs, sub-factors, and relational patterns that reflect the real-world dynamics of ethnic entrepreneurship. The second source is the systematic literature review, which synthesized theoretical and empirical insights from behavioral finance, project management, entrepreneurship, and socio-economic studies to contextualize and validate the qualitative findings. The integration of these two sources ensures that the proposed model is both empirically grounded and theoretically robust, providing a comprehensive foundation for the subsequent quantitative investigation.

Accordingly, this chapter is organized into two main parts. The first part presents the 0-Level Conceptual Model, which provides an overview of the core constructs, their interrelationships, and their functional roles within the model (independent, dependent, mediating, and moderating). The second part, the 1-Level Conceptual Model, elaborates on each construct and its sub-factors in detail, develops the theoretical rationale for their interconnections, and formulates the corresponding research hypotheses. This multi-level structure ensures conceptual clarity, logical progression, and analytical depth in linking behavioral, managerial, and contextual dimensions to ethnic entrepreneurs' investment success.

3.1. 0-Level Conceptual Model: Overview of Core Constructs and Relationships

The 0-Level Conceptual Model¹ provides a macro-level representation of the research framework, illustrating the primary constructs, their interrelationships, and their functional roles as independent, dependent, mediating, or moderating variables. This level of the model serves as

1. Level 0 diagram is called a Context Diagram. It's a basic overview of the whole system or process being analyzed or modeled. It is designed to be an at-a-glance view, showing the model as a single high-level process, with its relationship to entities (Q. Li & Chen, 2009; Yourdon, 1975). It should be easily understood by audiences.

an orienting map, allowing readers to grasp the overall architecture before examining the detailed construct-level analysis in the subsequent section (1-Level Conceptual Model). The model integrates behavioral, managerial, financial, and environmental dimensions to explain Ethnic Entrepreneurs' Investment Success (EEIS) in a comprehensive and systematic manner.

At the core of the framework, Behavioral Finance (BF) functions as the independent variable (IV). Drawing on principles from heuristics, prospect theory, and market conditions, BF encompasses the cognitive, emotional, and perceptual biases that influence entrepreneurs' investment decisions. The qualitative phase of the study, conducted through semi-structured interviews with ethnic entrepreneurs, revealed how these behavioral tendencies manifest in decision-making under uncertainty, highlighting their relevance as key predictors of investment outcomes.

The dependent variable (DV) is Ethnic Entrepreneurs' Investment Success (EEIS), conceptualized as a multidimensional construct encompassing performance, satisfaction, sustainability, adaptation, and social effects. EEIS captures both objective outcomes and subjective evaluations of entrepreneurial achievement, providing a holistic measure of success that reflects economic, social, and adaptive dimensions.

The model incorporates PM² (Agile, Portfolio, and Program Management) as a mediating–moderating variable. PM² operationalizes managerial competencies that translate behavioral tendencies into structured investment practices. By mediating the relationship between BF and EEIS, PM² explains how effective management strategies can mitigate behavioral biases and enhance investment success. Its moderating function reflects the differential impact of managerial practices under varying conditions of financial literacy and business environment.

Financial Literacy (FL) and Business Environment (BE) serve as moderators that shape the strength and direction of relationships within the model. Financial Literacy, composed of competency, professionalism, and opportunity, enhances entrepreneurs' capacity to interpret financial information, evaluate risks, and make informed decisions, thereby modulating the direct effect of BF on EEIS. Business Environment, comprising macroeconomic, microeconomic, and ecological factors, contextualizes entrepreneurial activity by introducing opportunities and constraints that influence the effectiveness of behavioral and managerial factors.

Finally, demographic variables are included as control variables to account for individual-level differences that may influence investment success. These variables provide additional explanatory power and ensure that the observed relationships are not confounded by factors such as age, education, or entrepreneurial experience.

The 0-Level Conceptual Model is depicted in Figure 6, which presents the constructs, their sub-factors, and the directional relationships. In the diagram, arrows indicate hypothesized causal or moderating pathways: BF directly affects EEIS, while PM² mediates and moderates this effect; FL and BE moderate direct relationships. Demographics are shown as covariates influencing EEIS. This macro-level representation sets the stage for the 1-Level Conceptual Model, where each construct is examined in detail, sub-factors are described, and specific hypotheses are developed.

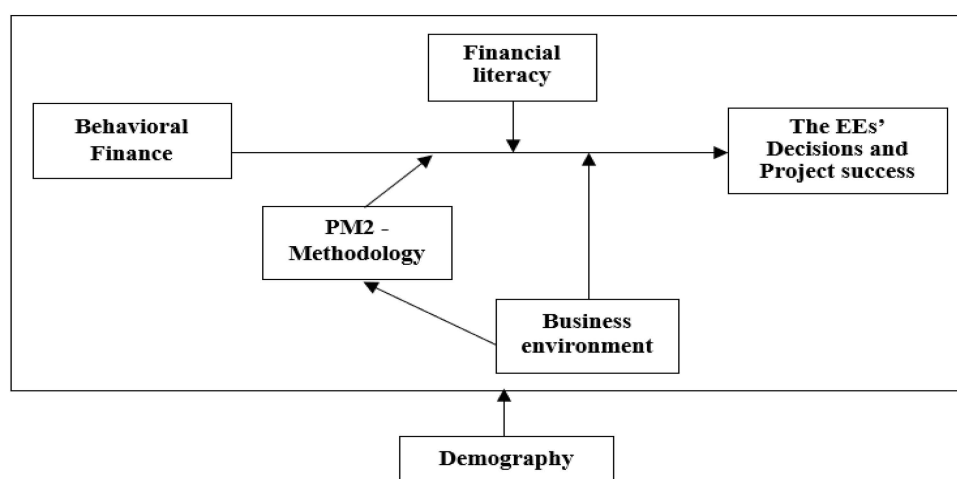


FIGURE 6. LEVEL OF THE CONCEPTUAL MODEL OF THE STUDY

Source: the researcher

3.2. 1-Level Conceptual Model: Dimensions, Variables, and Hypotheses Development

Building upon the 0-Level conceptual model, which outlined the main constructs and their interrelationships, this section presents the 1-Level conceptual model, offering a detailed theoretical elaboration of each major construct and its sub-factors. The aim is to specify how behavioral, managerial, financial, and environmental elements interact to shape Ethnic Entrepreneurs' Investment Success (EEIS).

Each construct is theoretically grounded in prior research and empirically supported by insights from the qualitative phase of this study, which included semi-structured interviews with

ethnic entrepreneurs. These interviews provided rich contextual understanding of how behavioral finance tendencies, managerial approaches, and environmental dynamics influence entrepreneurial investment behavior. The following subsections present each main construct sequentially, beginning with the independent variable (Behavioral Finance), then discussing the mediating–moderating construct (PM²), followed by the moderating variables (Financial Literacy and Business Environment), and concluding with the dependent variable (EEIS). For each construct, relevant sub-factors are defined, theoretical linkages are discussed, and specific hypotheses are formulated to guide empirical testing.

3.2.1. Behavioral finance (independent variable)

Behavioral Finance (BF) integrates insights from cognitive psychology into financial decision-making, emphasizing that investors, including entrepreneurial decision makers, systematically deviate from the ideal of *homo economicus* due to heuristics, biases, emotions, and contextual cues (Kahneman & Tversky, 1974; Thaler, 1999). In the context of ethnic entrepreneurship, these behavioral tendencies become especially pronounced. Operating under conditions of uncertainty, limited market information, and resource constraints, ethnic entrepreneurs often rely on intuitive judgment, past experience, and social cues rather than fully rational calculations (Busenitz & Barney, 1997; Shepherd & Zacharakis, 2001; Ram, 2022).

Behavioral tendencies such as overconfidence, optimism, loss aversion, and herding not only influence opportunity recognition and risk assessment but also affect investment timing, resource allocation, and strategic adaptation, ultimately shaping the overall success of entrepreneurial ventures (Baron, 2008; Dyer et al., 2021). Furthermore, these biases interact with socio-cultural and environmental factors: for instance, ethnic entrepreneurs embedded in strong community networks may amplify certain cognitive biases through social learning and normative pressures, while simultaneously drawing on collective knowledge to reduce uncertainty (Light & Gold, 2020; Yamamura et al., 2022).

Given this theoretical and empirical grounding, it is expected that Behavioral Finance, as an overarching construct, exerts a significant influence on Ethnic Entrepreneurs' Investment Success (EEIS). In other words, the cumulative effect of heuristics, Prospect Theory factors, and contextual market conditions shape not only decision quality but also adaptation, resilience, and sustainability

of investment outcomes in ethnic entrepreneurial settings. Accordingly, the main hypothesis is proposed:

H1: *Behavioral Finance factors have a significant effect on Ethnic Entrepreneurs' Investment Success (EEIS).*

Drawing on both classic and entrepreneurship-specific literature, this section then unpacks BF into three empirically and theoretically distinct sub-domains: Heuristics, Prospect Theory factors, and Market Conditions. Each dimension is linked to EEIS and, subsequently, to PM² (Agile, Program, and Portfolio management) as a proximate managerial response, forming the basis for the development of sub-hypotheses (H1a–H1c) in the following subsections.

3.2.1.1 Heuristics

The concept of heuristics originated in cognitive psychology to describe the mental shortcuts individuals employ to simplify complex decision-making under uncertainty. The seminal work of Kahneman and Tversky (1974) revolutionized understanding of human judgment by demonstrating that individuals deviate systematically from rational choice theory because they rely on fast, frugal rules rather than exhaustive analysis. While heuristics enable efficient decision-making, they also introduce predictable biases that distort perceptions of probability, risk, and value. These deviations laid the foundation for the field of Behavioral Finance, which examines how psychological processes influence financial behavior and market outcomes (Tversky & Kahneman, 1982; Barberis & Thaler, 2003).

In entrepreneurship, where uncertainty, time pressure, and incomplete information are ubiquitous, heuristics play a particularly central role (Busenitz & Barney, 1997; Baron, 2008). Entrepreneurs frequently make high-stakes investment decisions with limited data, relying on intuition, experience, and cognitive shortcuts. Heuristics are therefore both functional, by reducing cognitive load and enabling rapid responses, and dysfunctional when they bias judgment or produce systematic misestimations (Gigerenzer, 2008). The literature identifies several heuristic patterns that are especially salient for entrepreneurial investors, including optimism, overconfidence, availability, anchoring, and representativeness.

1. Optimism Bias- Optimism refers to the tendency to overestimate favorable outcomes and underestimate potential risks (Weinstein, 1980). Entrepreneurs are often characterized by

dispositional optimism, which sustains motivation and perseverance in uncertain contexts (Hmieleski & Baron, 2009). However, excessive optimism can lead to unrealistic projections of profitability, underestimation of costs, and delayed recognition of failure (Cooper et al., 1988). In investment contexts, optimism may foster overexpansion or resistance to strategic withdrawal, directly influencing business performance and sustainability, two dimensions of Ethnic Entrepreneurs' Investment Success (EEIS).

2. *Overconfidence*- It arises when decision-makers overestimate the accuracy of their information or control over outcomes (Barber & Odean, 2001). It is among the most documented biases in entrepreneurial behavior (Forbes, 2005). While moderate overconfidence may promote persistence and innovation (Hayward et al., 2006), excessive overconfidence leads to overinvestment, reduced diversification, and misjudged opportunity costs (Malmendier & Tate, 2005). Empirical studies (Koellinger et al., 2007) show that overconfident entrepreneurs invest more aggressively and are more prone to neglect downside risks, thereby amplifying variability in outcomes.

3. *Availability Heuristic*- The availability heuristic reflects the tendency to assess likelihoods based on easily recalled or vivid information (Tversky & Kahneman, 1974). Entrepreneurs relying on salient past experiences or anecdotal evidence may overreact to recent successes or failures, neglecting base-rate information and long-term trends (Busenitz & Barney, 1997). In ethnic entrepreneurship, this bias can manifest when entrepreneurs base strategic choices on experiences within co-ethnic networks or community stories (Ram, 2022), rather than objective market data.

4. *Anchoring*- Anchoring refers to the cognitive bias of relying too heavily on an initial reference point when making subsequent judgments (Tversky & Kahneman, 1974). Entrepreneurs may anchor on historical sales, previous investment amounts, or competitor benchmarks when evaluating new opportunities. Anchoring can stabilize expectations in uncertain markets but also inhibits adaptive learning, thereby limiting responsiveness to changing environmental conditions (Caputo et al., 2019).

5. *Representativeness Heuristic*- It involves judging probabilities by perceived similarity to existing prototypes rather than statistical evidence (Tversky & Kahneman, 1974). Entrepreneurs using representativeness may assume that ventures resembling successful cases will yield similar outcomes, ignoring contextual differences. This bias can explain why certain ethnic groups

replicate familiar business models (e.g., restaurants, retail) even when market saturation or structural barriers constrain profitability (Light & Gold, 2000; Ram et al., 2022).

From a theoretical standpoint, these heuristics collectively illustrate the bounded rationality of entrepreneurial decision-making (Simon, 1979, 1997). Rather than being purely irrational, heuristics represent adaptive responses to constraints of time, information, and cognitive capacity (Gigerenzer, 2008). For ethnic entrepreneurs, bounded rationality is intensified by additional factors such as linguistic barriers, institutional unfamiliarity, and reliance on community networks. Consequently, heuristics may serve as socially embedded cognitive tools, balancing efficiency with identity-driven decision-making. Accordingly, H1a is proposed as the following:

H1a: *Heuristics (optimism, overconfidence, availability, anchoring, and representativeness) significantly influence EEIS.*

Additionally, empirical research further suggests that heuristic biases affect not only investment performance but also the organizational practices entrepreneurs adopt to manage decision uncertainty. When entrepreneurs experience the negative consequences of biased judgments, they may compensate by introducing structured management systems, such as agile, Program, and Portfolio Management (PM²) frameworks (Baron, 2008; Shepherd & Zacharakis, 2001). In this sense, heuristics may indirectly promote managerial formalization and learning processes.

3.2.1.2 Prospect Theory

Prospect Theory (Kahneman & Tversky, 1979) represents one of the most influential paradigms in behavioral decision-making, fundamentally challenging the expected utility framework of classical economics. It posits that individuals evaluate outcomes not in absolute terms but relative to a reference point, displaying asymmetric attitudes toward gains and losses. Specifically, people tend to be risk-averse in gains but risk-seeking in losses, and losses are psychologically weighted more heavily than equivalent gains, a phenomenon known as loss aversion. This theory has been instrumental in explaining various financial and entrepreneurial behaviors that deviate from rational models of choice.

In the entrepreneurial context, Prospect Theory provides a rich explanatory lens for understanding investment behavior under uncertainty, where decisions often involve trade-offs

between potential gains and losses, emotional reactions to outcomes, and mental categorization of risks. Entrepreneurs, especially ethnic entrepreneurs, who frequently operate in resource-constrained and institutionally uncertain environments, face continuous challenges of evaluating uncertain payoffs, managing sunk costs, and framing strategic decisions (Baron, 2008; Sarasvathy, 2001). These decision dynamics are closely associated with three sub-factors of Prospect Theory: mental accounting, framing effects, and regret and loss aversion.

1. Mental Accounting- It refers to the cognitive process through which individuals categorize, evaluate, and track financial activities using mental “accounts” rather than treating money as fully fungible (Thaler, 1999). Entrepreneurs often mentally segregate funds based on source, purpose, or perceived importance, such as treating initial capital, profits, and savings as distinct decision categories. While mental accounting simplifies complex financial management, it can result in non-optimal resource allocation and investment distortions (Shefrin & Statman, 1985).

For ethnic entrepreneurs, mental accounting is particularly relevant because of cultural norms surrounding money management, community obligations, and informal financial practices such as rotating credit associations or remittance networks (Light & Gold, 2000; Basu & Altinay, 2002). Entrepreneurs may earmark funds for family or community needs, prioritizing social or symbolic objectives over purely economic ones. This mental compartmentalization can affect liquidity management, reinvestment decisions, and long-term business sustainability.

Empirical studies in behavioral finance confirm that mental accounting shapes portfolio diversification, consumption patterns, and investment timing (Thaler, 1999; Barberis & Huang, 2001). Within small business and entrepreneurial contexts, it helps explain why decision-makers sometimes persist with low-yield investments or maintain separate financial “buckets” that reduce overall returns but increase psychological comfort.

2. Framing Effects- Framing refers to the way choices are presented and perceived, influencing decisions by altering the subjective interpretation of outcomes (Tversky & Kahneman, 1982). When equivalent information is framed as a gain or a loss, individuals respond differently, even though the underlying data are identical. Entrepreneurs are especially susceptible to framing because they constantly make interpretive judgments about market information, opportunities, and risk communication (Baron, 1998). Framing can affect entrepreneurial decisions in multiple ways:

- When opportunities are framed as potential gains, entrepreneurs may exhibit excessive risk aversion, missing innovative ventures.
- Conversely, when decisions are framed as avoiding losses, entrepreneurs may take unwarranted risks to recover sunk investments (Kahneman & Tversky, 1979; Shepherd et al., 2009).
- Framing also influences communication and stakeholder persuasion; for instance, how entrepreneurs frame a business's potential can affect investor confidence, employee motivation, and partner collaboration (Baron, 2008).

Among ethnic entrepreneurs, framing often interacts with cultural cognition and community narratives. The way success and failure are socially interpreted within ethnic communities, whether seen as a personal achievement or collective responsibility, shapes how entrepreneurs perceive and present business risks. Consequently, framing effects can influence the psychological resilience and social legitimacy of ethnic enterprises.

3. Regret and Loss Aversion- Loss aversion, the cornerstone of Prospect Theory, captures the idea that losses loom larger than equivalent gains. The psychological pain of losing \$1,000 is stronger than the pleasure of gaining \$1,000 (Kahneman & Tversky, 1979). This asymmetry can lead entrepreneurs to avoid necessary risks, delay divestment from failing projects, or hold onto unprofitable investments due to the fear of realizing losses (Shepherd, 2003). The behavioral manifestation of loss aversion is regretting aversion, a tendency to avoid decisions that could lead to future regret (Zeelenberg, 1999).

In entrepreneurship, regret and loss aversion have both positive and negative implications. On one hand, they may constrain innovation and risk-taking; on the other, they encourage caution, due diligence, and long-term thinking (Loomes & Sugden, 1982). For ethnic entrepreneurs, these dynamics are intensified by the social embeddedness of business ventures, where failures can affect not only personal standing but also family and community reputation (Ram et al., 2022). Hence, loss and regret aversion can influence not only financial behavior but also the emotional governance of ethnic enterprises.

Empirical findings support these effects: entrepreneurs who exhibit high loss aversion are less likely to engage in radical innovation, more likely to delay exit from unprofitable businesses, and more sensitive to perceived reputational losses (Shepherd et al., 2009; Wennberg et al., 2010).

Conversely, controlled exposure to loss experiences may foster adaptive learning and risk recalibration over time. Based on above discussion, H1b is proposed as the following:

H1b: *Prospect Theory factors (mental accounting, framing effects, and regret/loss aversion) significantly influence EEIS.*

Together, these sub-factors reflect how Prospect Theory reframes entrepreneurial decision-making as a process shaped by perception, emotion, and reference dependence rather than pure rational optimization. For ethnic entrepreneurs, mental accounting, framing, and loss/regret aversion jointly define how they conceptualize opportunities, manage uncertainty, and balance economic versus social objectives. These behaviors influence not only investment outcomes but also the adoption of structured management practices (PM²) designed to counteract or channel cognitive biases toward more consistent performance.

3.2.1.3 Market Conditions

In behavioral finance and entrepreneurship, market conditions refer not only to external economic parameters but also to the perceived behavioral environment in which entrepreneurs make investment decisions. While classical economics assumes that market actors respond rationally to objective signals, behavioral perspectives highlight that entrepreneurs' interpretations of these signals are filtered through social influence, historical learning, and information asymmetry (Shiller, 2000; Barberis & Thaler, 2003).

Within the context of ethnic entrepreneurship, market conditions are further shaped by cultural cognition and community-based information systems. Entrepreneurs rely heavily on social learning, peer imitation, and network information, making their perception of market conditions a socially embedded and interpretive process rather than a purely analytical one (Ram et al., 2022; Light & Gold, 2020).

Importantly, the qualitative phase of this research, based on semi-structured interviews with ethnic entrepreneurs, revealed that perceptions of market dynamics are central to their investment decision-making. Participants repeatedly emphasized how community behaviors, local economic signals, and shared narratives guided their timing of investments, diversification decisions, and innovation choices. Three key behavioral sub-factors emerged from the qualitative data: herding

behavior, past trend reliance, and market information interpretation. These were further corroborated, where possible, with existing behavioral finance literature.

1. Herding Behavior- Herding behavior reflects the tendency of entrepreneurs to imitate the decisions of others, especially when facing uncertainty or limited information. This social conformity effect arises from a desire to align with perceived successful peers, thereby reducing individual risk (Banerjee, 1992; Bikhchandani et al., 1998).

The qualitative findings strongly confirmed that ethnic entrepreneurs often use peer behavior as a proxy for market information. For instance, several respondents described investing in similar sectors, such as food services or retail, because “others in the community succeeded there.” This imitation is reinforced by cultural norms of trust and reputation within ethnic networks, where success stories spread quickly and shape collective perception of “safe” investments.

This dynamic, though risk-reducing in early stages, can also generate competitive saturation and innovation stagnation within enclaves (Chrysostome & Lin, 2010). Empirical studies support these findings: herding in entrepreneurial ecosystems can lead to convergence around familiar business models, delaying diversification (Mertzanis et al., 2018). However, moderate herding can also foster collective learning and shared market intelligence, especially in uncertain environments.

2. Past Trends- The second sub-factor, past trends, refers to the entrepreneurs’ reliance on previous market experiences, either personal or collective, as a guide for current investment decisions. In the qualitative phase, participants often explained their strategies in reference to historical performance, “*this type of business has always worked for us*” or “*my family ran the same business back home.*”

This pattern reflects a temporal heuristic, where past success serves as a psychological anchor for future decisions. While it may support confidence and continuity, excessive dependence on past patterns can lead to path dependency and resistance to innovation (Gavetti & Levinthal, 2000). In ethnic entrepreneurship, these past trends are not merely economic but cultural scripts of success, often transmitted intergenerationally and collectively validated within the community (Geligh et al., 2022). By using familiar business templates, entrepreneurs’ lower uncertainty and transaction costs. Yet this also limits strategic adaptation to new market realities, highlighting the tension between cultural continuity and economic evolution.

3. *Market Information*- The third component, market information, concerns how entrepreneurs' access, interpret, and apply business intelligence. Unlike mainstream firms with access to formal data systems, many ethnic entrepreneurs depend on informal, trust-based information channels, family networks, ethnic associations, and diaspora contacts (Aliaga-Isla & Rialp, 2013; Dheer, 2024).

From the qualitative interviews, respondents described relying on word-of-mouth insights, community media, and personal observation rather than formal market research. This reliance ensures culturally relevant and timely insights but can also perpetuate bounded rationality and information asymmetry (Simon, 1987). However, a new trend noted by participants, particularly younger entrepreneurs, was the growing use of digital platforms and transnational links to gather market information. This shift indicates a hybrid model where traditional social capital combines with modern digital intelligence, enhancing adaptability and competitiveness.

In summary, market conditions as conceptualized in this study emerge as a hybrid behavioral construct, grounded in both theory and empirical observation. The three sub-factors, herding, past trends, and market information, capture how ethnic entrepreneurs collectively interpret and respond to their market environment. Rather than viewing market conditions as exogenous forces, this model emphasizes their perceived and socially constructed nature, consistent with behavioral and socio-cultural entrepreneurship theories (Ram, 2022; Yamamura et al., 2022). This conceptualization extends behavioral finance by integrating social embeddedness and community cognition into market perception, offering a richer explanation of how ethnic entrepreneurs navigate uncertainty, risk, and adaptation. Therefore, H1c is developed as the following:

H1c: *Market Conditions factors (herding behavior, past trends, and market information) significantly influence EEIS.*

3.2.1.4 Integrative Summary and Hypotheses for Behavioral Finance (BF)

Based on the theoretical and empirical discussion in the previous subsections, the main and sub-hypotheses developed for this section are summarized in Table 5 for clarity and reference. This summary table consolidates the overarching hypothesis (H1) along with its sub-hypotheses (H1a–H1c) linked to the three BF dimensions, providing a clear and concise overview of the proposed relationships with Ethnic Entrepreneurs' Investment Success (EEIS). Presenting the hypotheses in this structured format facilitates a comprehensive understanding of how behavioral

tendencies collectively and individually influence investment outcomes and serves as a foundation for subsequent analysis of mediated and moderated mechanisms in the conceptual model.

TABLE 5. SUMMARY OF BEHAVIORAL FINANCE HYPOTHESES

Source: the researcher

Hypothesis	Description	Independent Variable (IV)	Dependent Variable (DV)
H1	Behavioral Finance factors have a significant effect on Ethnic Entrepreneurs' Investment Success	Behavioral Finance (BF)	Ethnic Entrepreneurs' Investment Success (EEIS)
H1a	Heuristics (optimism, overconfidence, availability, anchoring, and representativeness) significantly influence EEIS	Heuristics	EEIS
H1b	Prospect Theory factors (mental accounting, framing, regret/loss aversion) significantly influence EEIS	Prospect Theory factors	EEIS
H1c	Market Conditions factors (herding behavior, past trends, market information) significantly influence EEIS	Market Conditions	EEIS

3.2.2. PM² as a Moderated-Mediation Construct

Project Management Methodology (PM²), developed by the European Commission, is a comprehensive project management framework designed to enhance organizational effectiveness through structured governance, stakeholder alignment, and adaptable execution processes. PM² integrates classical project management principles with agile and program–portfolio perspectives, promoting coherence, transparency, and iterative learning across projects (European Commission, 2018). In entrepreneurial contexts, PM²'s adaptability and results-oriented logic are particularly relevant for ethnic entrepreneurs (EEs), who often operate in volatile environments characterized by resource constraints, market uncertainty, and behavioral biases.

The inclusion of PM² in the conceptual model is theoretically grounded in behavioral decision theory, organizational learning, and strategic management perspectives. From a behavioral standpoint, cognitive biases and heuristics can distort entrepreneurs' judgment and risk perception (Kahneman & Tversky, 1979; Busenitz & Barney, 1997). PM² acts as a corrective managerial mechanism that structures decision-making, embeds feedback loops, and standardizes evaluation criteria, thereby mitigating the adverse impact of behavioral deviations. Through its

emphasis on planning, monitoring, and stakeholder engagement, PM² transforms intuitive and potentially biased investment judgments into more evidence-based, systematic, and goal-oriented actions.

From an organizational learning lens, PM² provides a framework for knowledge transfer and iterative improvement, which are essential for entrepreneurial sustainability and adaptation (Nonaka & Takeuchi, 1995; Argyris & Schön, 1997). For ethnic entrepreneurs, the PM² methodology supports continuous learning and capability building across ventures, enabling them to manage multiple investment activities within a coherent managerial system. This aligns with the notion that structured management processes enhance entrepreneurial performance by balancing exploration and exploitation (March, 1991).

Furthermore, PM² plays a dual role in the proposed model. As a mediator, it operationalizes how Behavioral Finance (BF) influences Ethnic Entrepreneurs' Investment Success (EEIS). Specifically, behavioral tendencies such as overconfidence, optimism, and framing effects shape the extent to which entrepreneurs adopt and effectively apply PM² practices. In turn, successful implementation of PM² translates these behavioral orientations into more consistent performance outcomes. As a moderator, PM² strengthens or weakens the relationship between BF and EEIS depending on the degree to which its principles, such as agile responsiveness, portfolio coherence, and program coordination, are institutionalized in the entrepreneur's decision system.

In summary, PM² provides a structured managerial mechanism that links cognitive-behavioral tendencies with tangible investment outcomes, ensuring that entrepreneurial decision-making becomes more disciplined, adaptive, and learning-driven. It thus functions as both a mediating and moderating construct that channels behavioral dynamics into systematic investment success. Accordingly, the following hypothesis is proposed:

H2: *Project Management Methodology (PM²) mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS).*

Building on this conceptualization, PM² can be further understood through its three interrelated managerial dimensions: Agile Management, Portfolio Management, and Program Management. Each dimension reflects a specific operational logic through which PM² translates behavioral orientations into structured decision-making and performance outcomes. Together, these components operationalize the behavioral and organizational pathways through which PM²

mediates and moderates the link between Behavioral Finance and Ethnic Entrepreneurs' Investment Success (EEIS).

3.2.2.1. Agile Management

Agile Management, originally developed within software development frameworks, has evolved into a universal management philosophy emphasizing flexibility, responsiveness, and iterative learning in complex and dynamic environments (Highsmith, 2009; Rigby, Sutherland & Takeuchi, 2016). Within the PM² framework, Agile Management represents the adaptive execution layer, enabling entrepreneurs to continuously refine goals, reallocate resources, and integrate stakeholder feedback throughout the investment cycle. This adaptability is particularly critical for ethnic entrepreneurs, who often face volatile market conditions, limited access to capital, and cultural or institutional barriers that necessitate rapid decision adjustments and opportunity exploitation (Ram et al, 2017; Urbano et al., 2019).

From a behavioral finance perspective, Agile practices can counteract the rigidity and escalation of commitment associated with biases such as overconfidence, anchoring, or loss aversion (Tversky & Kahneman, 1992). By promoting short feedback loops, iterative planning, and cross-functional collaboration, Agile Management introduces mechanisms for cognitive de-biasing, encouraging evidence-based pivots instead of intuition-driven persistence (Crawford & Nahmias, 2010). This responsiveness allows entrepreneurs to convert behavioral tendencies into learning opportunities, enhancing strategic flexibility and innovation capacity.

In entrepreneurial investment contexts, Agile Management has also been associated with higher performance and sustainability outcomes (Conforto et al., 2016; Serrador & Pinto, 2015). For ethnic entrepreneurs, adopting agile practices can facilitate quicker adaptation to market signals, improved communication with culturally diverse stakeholders, and a more resilient investment trajectory. Through this mechanism, Agile Management mediates the translation of behavioral finance factors into effective, context-sensitive investment behaviors, and moderates the relationship by buffering adverse cognitive or environmental effects. Accordingly, the following sub-hypothesis is proposed:

H2a: *Agile Management mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS).*

3.2.2.2. *Portfolio Management*

Portfolio Management (PM) constitutes a strategic decision-making process that involves the selection, prioritization, and balancing of multiple investments or projects to achieve optimal risk–return outcomes (Markowitz, 1952; Müller, 2008). Within the PM² framework, it represents the coordination layer that aligns entrepreneurial initiatives with long-term objectives, resource constraints, and environmental contingencies. For ethnic entrepreneurs, Portfolio Management is especially critical, as it enables the rational allocation of often limited capital, time, and human resources across diverse and uncertain opportunities (Chandler & Hanks, 1994; Naudé, 2024).

Behavioral finance theory provides a useful lens for understanding why structured portfolio management is essential. Entrepreneurs are prone to biases such as overconfidence, optimism, or herding, which can result in concentrated and poorly diversified investment decisions (Barberis & Thaler, 2003; Statman, 2014). A disciplined portfolio approach can mitigate these tendencies by enforcing systematic evaluation and diversification, thus reducing exposure to emotional decision-making and cognitive shortcuts (Kahneman & Riepe, 1998). In this way, Portfolio Management functions as both a behavioral control mechanism and a strategic optimization process.

Empirical research supports the positive role of Portfolio Management in enhancing investment success, innovation outcomes, and resilience across uncertain environments (Killen & Hunt, 2010; Martinsuo, 2013). For ethnic entrepreneurs, portfolio thinking allows balancing traditional, community-anchored ventures with innovative or mainstream market initiatives, an approach that fosters hybridization and adaptive growth (Goswami et al., 2024). Furthermore, the integration of PM²'s governance principles ensures that decision-making remains transparent and data-driven, reinforcing credibility within multicultural teams and external stakeholders (European Commission, 2021).

Thus, Portfolio Management acts as a mediating mechanism translating behavioral finance-driven decision tendencies into structured, evidence-based investment actions, and as a moderating mechanism that buffers the negative impact of uncertainty and bounded rationality on Ethnic Entrepreneurs' Investment Success (EEIS). Accordingly, the following sub-hypothesis is proposed:

H2b: Portfolio Management mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS).

3.2.2.3. *Program Management*

Program Management (PgM) operates at the strategic integration level of the PM² framework, focusing on coordinating related projects and investments to achieve collective benefits that exceed the sum of their individual parts (Pellegrinelli, 2011; Lycett et al., 2004). It involves harmonizing objectives, resources, and interdependencies across multiple initiatives to ensure strategic coherence and sustainable value creation. For ethnic entrepreneurs, who often manage diverse ventures spanning local community enterprises and emerging market opportunities, Program Management provides a structured mechanism to align strategic intent with operational execution under resource and institutional constraints (Ram, 2022; Dabić et al., 2021).

From a behavioral finance perspective, Program Management mitigates the fragmentation and inconsistency that can arise from bounded rationality, emotional decision-making, and cognitive biases such as anchoring, loss aversion, and framing effects (Tversky & Kahneman, 1981; Barberis, 2018). By emphasizing long-term coordination and adaptive governance, it enables entrepreneurs to transcend short-term heuristics and focus on sustained portfolio alignment and value realization (Müller et al., 2015; Thiry, 2015). This higher-order coordination helps transform reactive behavior into strategic foresight, ensuring that behavioral tendencies are integrated into a disciplined, learning-oriented investment architecture.

Moreover, empirical research shows that effective Program Management enhances organizational agility, stakeholder confidence, and project synergies, leading to improved performance, innovation diffusion, and resilience in uncertain environments (Pellegrinelli et al., 2007; Thiry, 2015). For ethnic entrepreneurs, these benefits translate into stronger capacity for cross-project learning, transnational coordination, and adaptation to dynamic market conditions, capabilities essential for sustained investment success and socio-economic impact (Solano et al., 2022).

Thus, Program Management serves a dual function within the conceptual model: it mediates the influence of Behavioral Finance (BF) on Ethnic Entrepreneurs' Investment Success (EEIS) by structuring behavioral inputs into coherent strategic processes and moderates this relationship by buffering the effects of cognitive and contextual uncertainty on decision outcomes. Accordingly, the following sub-hypothesis is proposed:

H2c: Program Management mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS).

3.2.2.4. Integrative Summary and Hypotheses for PM²

The discussion above conceptualized PM² as a multidimensional managerial framework that mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS). Drawing on insights from both the literature and the qualitative phase (semi-structured interviews with ethnic entrepreneurs), PM² was operationalized through three core dimensions: Agile Management, Portfolio Management, and Program Management. Collectively, these components capture how structured, yet adaptive management practices can transform cognitively biased or emotionally influenced financial decisions into coherent, evidence-based, and contextually responsive investment behaviors.

Theoretically, PM² bridges the gap between behavioral decision processes and strategic investment performance by embedding flexibility, coordination, and learning mechanisms into entrepreneurial practice. Empirical findings from both project management and entrepreneurship research emphasize that adopting such structured governance mechanisms enhances resource optimization, innovation diffusion, and resilience, particularly under conditions of uncertainty and constraint, contexts that closely mirror those faced by ethnic entrepreneurs (Killen & Hunt, 2010; Thiry, 2015; Naudé, 2022).

Accordingly, the hypotheses developed in this section (H2–H2c) propose that PM² -project management methodology and its sub-dimensions, agile, portfolio and program management act as mediating and moderating mechanisms, shaping how behavioral tendencies manifest in investment performance and affect EEs' investment success. For clarity and reference, Table 6 summarizes the main and sub-hypotheses associated with PM² within the conceptual framework.

TABLE 6. SUMMARY OF HYPOTHESES FOR PM²

Source: the researcher

Hypothesis	Statement	Independent Variable (IV)	Mediating/Moderating Variable	Dependent Variable (DV)
H2	Behavioral Finance (BF) influences Ethnic Entrepreneurs' Investment Success (EEIS) through the mediating and moderating effects of PM ² practices.	Behavioral Finance (BF)	PM ² (as a combined managerial framework)	Ethnic Entrepreneurs' Investment Success (EEIS)

Continue Table 6. Summary of hypotheses for PM²

Hypothesis	Statement	Independent Variable (IV)	Mediating/Moderating Variable	Dependent Variable (DV)
H2a	Agile Management mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS).	Behavioral Finance (BF)	Agile Management	Ethnic Entrepreneurs' Investment Success (EEIS)
H2b	Portfolio Management mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS).	Behavioral Finance (BF)	Portfolio Management	Ethnic Entrepreneurs' Investment Success (EEIS)
H2c	Program Management mediates and moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS).	Behavioral Finance (BF)	Program Management	Ethnic Entrepreneurs' Investment Success (EEIS)

3.2.3. Financial Literacy (FL) as a Moderator

Financial Literacy (FL) represents the knowledge, skills, and confidence necessary to make informed and effective financial decisions (Lusardi & Mitchell, 2014; Huston, 2010). In entrepreneurial contexts, it encompasses the ability to understand financial statements, assess risk, allocate capital efficiently, and evaluate investment opportunities. For ethnic entrepreneurs, FL is particularly critical, as they often operate under information asymmetry, resource constraints, and complex institutional environments that amplify the impact of cognitive biases and behavioral tendencies (Dana, 2007; Ram, 2022).

From a behavioral finance perspective, individuals with higher financial literacy are better equipped to mitigate the negative effects of heuristics, framing biases, overconfidence, and loss aversion on investment decisions (Klapper et al., 2013; Lusardi, 2019). For example, knowledge of diversification principles, risk-adjusted returns, and capital allocation strategies can reduce over-reliance on intuition or anchoring, enabling entrepreneurs to make more rational and evidence-based investment choices.

In the conceptual model, FL is positioned as a moderator that influences the strength and direction of the relationship between Behavioral Finance (BF) factors, PM² practices, and Ethnic Entrepreneurs' Investment Success (EEIS). Specifically, higher levels of FL are expected to enhance the positive effects of structured managerial practices (PM²) and buffer potential negative

consequences of behavioral biases on investment outcomes. Conversely, lower FL may exacerbate the impact of cognitive errors and reduce the efficacy of managerial interventions.

Based on both the literature and qualitative findings from semi-structured interviews, Financial Literacy is operationalized through three interrelated components: 1) Competency; the ability to interpret financial information accurately and make informed investment decisions. 2) Professionalism; the application of financial knowledge in systematic and professional ways, including planning, monitoring, and reporting. And 3) Opportunity Recognition; the capacity to identify and evaluate profitable financial and market opportunities effectively (Huston, 2010; OECD, 2018). Given this theoretical foundation, the overarching hypothesis for FL as a moderator is proposed:

H3: *Financial Literacy moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that higher financial literacy strengthens positive effects and mitigates negative influences.*

To operationalize Financial Literacy within the conceptual model, it is further divided into three key dimensions, Competency, Professionalism, and Opportunity Recognition (Suresh, 2024; Suresh et al., 2025). Each of these components captures a distinct aspect of financial knowledge and its application, and each is hypothesized to moderate the relationship between Behavioral Finance, PM² practices, and Ethnic Entrepreneurs' Investment Success (EEIS). The following sub-hypotheses (H3a–H3c) specify these expected effects.

3.2.3.1. Competency (H3a)

Competency refers to an entrepreneur's ability to accurately interpret financial information, analyze quantitative and qualitative data, and apply this knowledge effectively in investment decision-making (Huston, 2010; Lusardi & Mitchell, 2014). For ethnic entrepreneurs, high financial competency enables more informed assessment of risks and opportunities, reducing the influence of behavioral biases such as overconfidence, anchoring, and loss aversion (Klapper et al., 2013; Lusardi, 2019). Empirical evidence indicates that financially competent entrepreneurs are more likely to engage in systematic evaluation of investment alternatives, allocate resources efficiently, and achieve better financial performance (Cole et al., 2011; Dheer, 2024). Based on this theoretical rationale, the following sub-hypothesis is proposed:

H3a: *Financial Literacy competency moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that higher competency strengthens positive effects and mitigates negative influences.*

3.2.3.2 Professionality (H3b)

Professionality captures the systematic and disciplined application of financial knowledge in planning, monitoring, and controlling investment activities (Remund, 2010; Klapper et al., 2015). For ethnic entrepreneurs, high professionalism ensures that decisions are executed with consistency, accountability, and alignment with strategic objectives. This structured approach reduces the negative impact of behavioral biases, such as overconfidence, loss aversion, and framing effects, on investment decisions, while enhancing the effectiveness of managerial practices embedded in PM² (European Commission, 2018; Naudé, 2022). Accordingly, the following sub-hypothesis is proposed:

H3b: *Financial Literacy professionalism moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that higher professionalism strengthens positive effects and mitigates negative influences.*

3.3.3.3. Opportunity Recognition (H3c)

Opportunity Recognition reflects an entrepreneur's ability to identify, evaluate, and act upon profitable financial and market opportunities (Shane & Venkataraman, 2000; Ram et al., 2017). For ethnic entrepreneurs, high financial literacy in opportunity recognition enables more accurate assessment of potential gains and risks, reduces susceptibility to cognitive biases, and facilitates informed investment choices. This capability is particularly valuable under conditions of uncertainty and limited resources, as it allows entrepreneurs to capitalize on favorable market conditions while avoiding loss-prone decisions (Baron, 2008; Dabić et al., 2021). Based on this theoretical rationale, the following sub-hypothesis is proposed:

H3c: *Financial Literacy in opportunity recognition moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that higher opportunity recognition strengthens positive effects and mitigates negative influences.*

3.2.3.4. Integrative Summary and Hypotheses for Financial Literacy (FL)

Financial Literacy (FL) is conceptualized as a multidimensional moderator that influences how Behavioral Finance (BF) factors translate into Ethnic Entrepreneurs' Investment Success (EEIS). Drawing on both the literature and qualitative insights from semi-structured interviews with ethnic entrepreneurs, FL was operationalized through three interrelated components: Competency, Professionalism, and Opportunity Recognition. Each component captures a distinct aspect of financial knowledge and its application, highlighting the nuanced ways in which FL can strengthen positive effects and mitigate potential negative influences of behavioral biases on investment decisions. Based on this theoretical rationale, the main hypothesis (H3) and its sub-hypotheses (H3a–H3c) are summarized in Table 7 for clarity and reference.

TABLE 7. SUMMARY OF HYPOTHESES FOR FINANCIAL LITERACY (FL)

Source: the researcher

Hypothesis	Statement	Independent Variable (IV)	Moderating Variable	Dependent Variable (DV)
H3	Financial Literacy moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), strengthening positive effects and mitigating negative influences.	Behavioral Finance (BF)	Financial Literacy (FL)	Ethnic Entrepreneurs' Investment Success (EEIS)
H3a	Financial Literacy competency moderates the relationship between BF and EEIS, such that higher competency strengthens positive effects and mitigates negative influences.	Behavioral Finance (BF)	FL – Competency	EEIS
H3b	Financial Literacy professionalism moderates the relationship between BF and EEIS, such that higher professionalism strengthens positive effects and mitigates negative influences.	Behavioral Finance (BF)	FL – Professionalism	EEIS
H3c	Financial Literacy in opportunity recognition moderates the relationship between BF and EEIS, such that higher opportunity recognition strengthens positive effects and mitigates negative influences.	Behavioral Finance (BF)	FL – Opportunity Recognition	EEIS

3.2.4. Business Environment (BE) as a Moderator

The business environment (BE) encompasses the external economic, institutional, and ecological conditions that shape entrepreneurial activity and investment outcomes (Dess & Beard, 1984; Zahra & Pearce, 1994). For ethnic entrepreneurs, the business environment can significantly influence the effectiveness of managerial practices, investment strategies, and the impact of behavioral tendencies on performance. A supportive environment facilitates opportunity

exploitation, resource access, and innovation, while a constraining environment amplifies uncertainty, risk, and the negative effects of cognitive biases (Dana, 2007; Ram, 2022).

In the proposed conceptual framework, BE is positioned as a moderator that affects the strength and direction of the relationship between BF, PM² practices, and EEIS. Specifically, a favorable business environment is expected to enhance the positive effects of structured managerial practices and mitigate the potential adverse influence of behavioral biases, whereas a restrictive or volatile environment may weaken these effects. The construct of BE is operationalized through three interrelated dimensions: 1) Macro-Economic Factors; including GDP growth, market stability, regulatory frameworks, and access to capital (Liu et al., 2022; Kabir et al., 2022). 2) Micro-Economic Factors; encompassing industry structure, competition intensity, customer demand, and supplier networks (Ahmed et al., 2022; Meressa, 2020). And 3) Ecological Factors; covering natural resource availability, sustainability regulations, and environmental risks (Moya-Clemente et al., 2020).

Drawing on both the literature and the qualitative phase of this study, the overarching hypothesis for BE is formulated as follows:

H4: *Business Environment moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that a more favorable environment strengthens positive effects and mitigates negative influences.*

To operationalize the moderating role of the Business Environment (BE) within the conceptual model, it is further divided into three key dimensions: Macro-Economic Factors, Micro-Economic Factors, and Ecological Factors. Each component captures a distinct aspect of the external environment that can influence how Behavioral Finance (BF) factors translate into Ethnic Entrepreneurs' Investment Success (EEIS). The following sub-hypotheses (H4a–H4c) specify the expected moderating effects of each dimension on this relationship.

3.2.4.1. Macro-Economic Factors (H4a)

Macro-Economic Factors encompass broad external conditions such as GDP growth, inflation rates, fiscal and monetary policies, regulatory frameworks, and access to financial markets (Dess & Beard, 1984; Zahra & Pearce, 1989). For ethnic entrepreneurs, these factors create the contextual backdrop within which investment decisions are made, influencing both

opportunity recognition and risk assessment. Favorable macroeconomic conditions, such as stable economic growth, supportive policies, and accessible credit, enhance the effectiveness of investment strategies and reduce the negative impact of behavioral biases, whereas volatile or restrictive conditions may exacerbate risk perception and decision errors (Dana, 2007; Ram, 2022). Accordingly, the following sub-hypothesis is proposed:

H4a: *Macro-Economic Factors moderate the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that more favorable macro-economic conditions strengthen positive effects and mitigate negative influences.*

3.2.4.2. Micro-Economic Factors (H4b)

Micro-Economic Factors refer to conditions at the industry, sector, or local market level that directly affect entrepreneurial operations. These include industry structure, competitive intensity, customer demand, supplier networks, and access to niche markets (Porter, 1980; Zahra & Pearce, 1989). For ethnic entrepreneurs, favorable microeconomic conditions provide opportunities to leverage community knowledge, cultural capital, and market insights, while reducing the impact of behavioral biases such as overconfidence or herding. Conversely, highly competitive or resource-constrained markets can amplify decision-making errors and hinder investment success (Ram, 2022; Dabić et al., 2021). Based on this rationale, the following sub-hypothesis is proposed:

H4b: *Micro-Economic Factors moderate the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that more favorable micro-economic conditions strengthen positive effects and mitigate negative influences.*

3.2.4.3. Ecological Factors (H4c)

Ecological Factors encompass environmental conditions, natural resource availability, sustainability regulations, and exposure to environmental risks that may influence entrepreneurial decision-making (Shrivastava, 1995; Bansal & Roth, 2000). For ethnic entrepreneurs, ecological conditions can shape both the opportunities and constraints associated with investments, particularly in sectors dependent on natural resources or subject to environmental regulations. Favorable ecological conditions, such as resource abundance or supportive sustainability policies, can enhance investment outcomes by enabling more confident and informed decision-making. Conversely, environmental uncertainty or resource scarcity may exacerbate the impact of

behavioral biases, such as loss aversion or overconfidence, reducing the likelihood of successful investment outcomes (Ram, 2022; Dabić et al., 2021). Accordingly, the following sub-hypothesis is proposed:

H4c: *Ecological Factors moderate the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), such that more favorable ecological conditions strengthen positive effects and mitigate negative influences.*

3.2.4.4. Integrative Summary and Hypotheses for Business Environment (BE)

The Business Environment (BE) is conceptualized as a multidimensional moderator that shapes how Behavioral Finance (BF) factors influence Ethnic Entrepreneurs' Investment Success (EEIS). Drawing on both literature and qualitative insights from semi-structured interviews with ethnic entrepreneurs, BE was operationalized through three interrelated dimensions: Macro-Economic Factors, Micro-Economic Factors, and Ecological Factors. Each component captures a distinct aspect of the external environment, highlighting the nuanced ways in which favorable conditions can strengthen positive effects and mitigate potential negative influences of behavioral biases on investment decisions. Based on this theoretical rationale, the main hypothesis (H4) and its sub-hypotheses (H4a–H4c) are summarized in Table 8 for clarity and reference.

TABLE 8. SUMMARY OF HYPOTHESES FOR BUSINESS ENVIRONMENT (BE)

Source: the researcher

Hypothesis	Statement	Independent Variable (IV)	Moderating Variable	Dependent Variable (DV)
H4	Business Environment moderates the relationship between Behavioral Finance (BF) and Ethnic Entrepreneurs' Investment Success (EEIS), strengthening positive effects and mitigating negative influences.	Behavioral Finance (BF)	Business Environment (BE)	Ethnic Entrepreneurs' Investment Success (EEIS)
H4a	Macro-Economic Factors moderate the relationship between BF and EEIS, such that more favorable macro-economic conditions strengthen positive effects and mitigate negative influences.	Behavioral Finance (BF)	BE – Macro-Economic Factors	EEIS
H4b	Micro-Economic Factors moderate the relationship between BF and EEIS, such that more favorable micro-economic conditions strengthen positive effects and mitigate negative influences.	Behavioral Finance (BF)	BE – Micro-Economic Factors	EEIS

Continue Table 8. Summary of Hypotheses for Business Environment (BE)

Hypothesis	Statement	Independent Variable (IV)	Moderating Variable	Dependent Variable (DV)
H4c	Ecological Factors moderate the relationship between BF and EEIS, such that more favorable ecological conditions strengthen positive effects and mitigate negative influences.	Behavioral Finance (BF)	BE – Ecological Factors	EEIS

3.2.5. Demographics as Control Variables

Demographic characteristics are widely recognized as important control variables in entrepreneurship and investment research, as they can influence access to resources, decision-making patterns, and overall business performance (Hisrich et al., 2005; Aldrich & Cliff, 2003). In the context of ethnic entrepreneurship, individual differences such as gender, age, education, language proficiency, entrepreneurial experience, and residency status can affect both behavioral tendencies and the capacity to implement managerial practices effectively.

Including demographics as control variables allows the model to isolate the effects of the main independent variables (Behavioral Finance factors), mediators/moderators (PM²), and moderators (Financial Literacy and Business Environment) on Ethnic Entrepreneurs' Investment Success (EEIS). By accounting for these factors, the analysis ensures that the observed relationships are not confounded by individual characteristics that could systematically influence investment outcomes (Dana, 2007; Ram, 2022). Specifically, the study controls the following demographic variables:

- *Gender*– may influence risk perception, decision-making, and access to resources.
- *Age*– older entrepreneurs may have greater experience but may also exhibit higher risk aversion.
- *Education Level*– formal education can enhance cognitive skills, financial literacy, and managerial competence.
- *Language Proficiency (French and English)*– bilingual or multilingual entrepreneurs may navigate institutional requirements and market opportunities more effectively.
- *Entrepreneurial Experience*– prior entrepreneurial exposure can improve opportunity recognition, adaptive capacity, and strategic decision-making.

- *Residency Status*– permanent or temporary residency may affect access to financial resources, institutional support, and market networks.

These control variables are not hypothesized to directly affect BF, PM², FL, or BE relationships but are included in the model to account for potential confounding effects on EEIS, ensuring that the main effects and moderation/mediation relationships are more accurately estimated.

In summary, in the proposed conceptual framework, demographic characteristics are included as control variables to account for individual differences that may influence Ethnic Entrepreneurs' Investment Success (EEIS). By controlling for these variables, the model ensures that the observed effects of Behavioral Finance (BF), PM² practices, Financial Literacy (FL), and Business Environment (BE) are not confounded by factors such as age, gender, education, language proficiency, entrepreneurial experience, or residency status. The main demographic variables considered in this study are summarized in Table 9 for clarity and reference.

TABLE 9. DEMOGRAPHIC CONTROL VARIABLES

Source: The researcher

Control Variable	Description / Operationalization	Role in the Model
Gender	Male / Female	Controls for differences in risk perception, decision-making, and resource access
Age	Continuous variable (years)	Controls for experience and potential risk aversion
Education Level	Highest formal education attained	Controls for cognitive skills, financial literacy, and managerial competence
Language Proficiency	French and English proficiency	Controls for ability to navigate institutional requirements and access markets
Entrepreneurial Experience	Years of prior entrepreneurial activity	Controls for opportunity recognition, adaptive capacity, and strategic decision-making
Residency Status	Permanent / Temporary	Controls for access to financial resources, institutional support, and market networks

3.3. Development of the Final Proposed Conceptual Model

Building on the theoretical and empirical discussions presented in the previous sections, the final proposed conceptual model integrates Behavioral Finance (BF), PM² practices, Financial Literacy (FL), Business Environment (BE), and demographic control variables to explain Ethnic Entrepreneurs' Investment Success (EEIS).

The model positions Behavioral Finance (BF) as the primary independent variable, capturing cognitive heuristics, prospect theory factors, and market conditions that influence investment decisions. These behavioral tendencies are hypothesized to directly affect EEIS, while also interacting with managerial practices. PM² practices are conceptualized as a mediator and moderator, representing the structured application of Agile, Portfolio, and Program Management techniques, which can translate behavioral tendencies into more effective investment outcomes.

Two moderators are incorporated to account for conditional effects: Financial Literacy (FL) and Business Environment (BE). FL, operationalized through competency, professionalism, and opportunity recognition, is expected to strengthen the positive effects of BF on EEIS by mitigating cognitive biases and enhancing informed decision-making. BE, divided into macro-economic, micro-economic, and ecological dimensions, is theorized to condition the BF and EEIS relationship by either facilitating or constraining investment success depending on environmental favorability.

Additionally, demographic characteristics, including gender, age, education, language proficiency (French and English), entrepreneurial experience, and residency status, are included as control variables to account for individual differences that could confound the main relationships. Controlling for these variables ensures that the observed effects of BF, PM², FL, and BE on EEIS are more accurately estimated.

Together, this integrated framework provides a comprehensive understanding of the cognitive, managerial, contextual, and personal factors that shape investment success among ethnic entrepreneurs. It combines insights from behavioral finance, entrepreneurship, project management, and socio-economic research, while grounding the model empirically through qualitative findings from semi-structured interviews. The model highlights not only direct effects but also mediating and moderating mechanisms that explain how behavioral tendencies are translated into investment outcomes under varying individual and environmental conditions.

The final conceptual model is illustrated in Figure 7, showing the relationships among BF, PM², FL, BE, EEIS, and demographic controls, along with the hypothesized moderating and mediating paths.

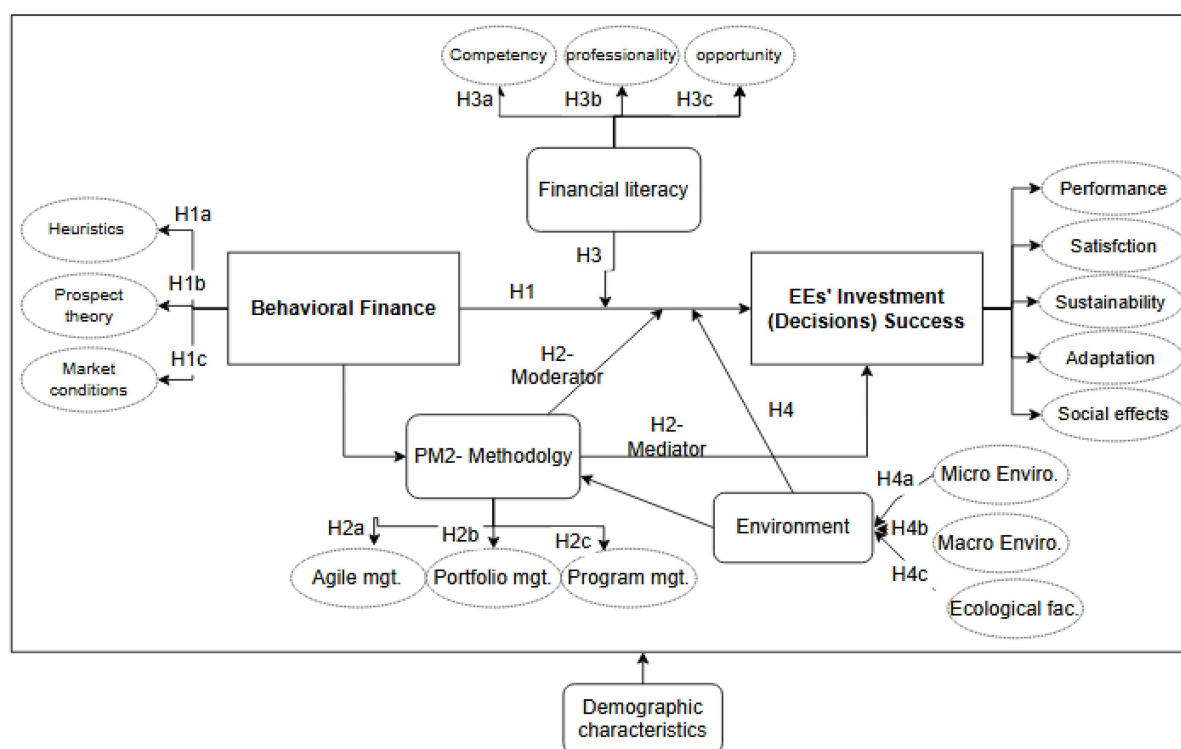


FIGURE 7. THE RESEARCH CONCEPTUAL FRAMEWORK

Source: The researcher

3.4. Chapter Summary

Chapter 3 developed the conceptual framework for this research, integrating theoretical insights, empirical evidence, and qualitative findings to explain Ethnic Entrepreneurs' Investment Success (EEIS). The chapter began by introducing the rationale for the framework, highlighting the importance of behavioral, managerial, financial, and environmental factors in shaping entrepreneurial investment decisions under uncertainty. It emphasized the mixed-methods approach, where semi-structured interviews with ethnic entrepreneurs complemented the literature review to identify relevant constructs, sub-factors, and relationships.

The first major component, Behavioral Finance (BF), was conceptualized as the independent variable, encompassing heuristics, prospect theory factors, and market conditions. Each dimension was theoretically discussed and linked to investment decision-making outcomes, with a set of main (H1) and sub-hypotheses (H1a–H1c) developed to capture its effects on EEIS. In addition, PM² practices were introduced as a mediator and moderator, operationalized through Agile

Management, Portfolio Management, and Program Management, reflecting the structured managerial strategies that can translate behavioral tendencies into successful investment outcomes (H2–H2c).

The chapter then presented Financial Literacy (FL) as a moderator of the BF and EEIS relationship. FL was decomposed into competency, professionalism, and opportunity recognition, with sub-hypotheses (H3a–H3c) articulating how these dimensions strengthen the positive effects of BF on investment success while mitigating cognitive biases. Similarly, Business Environment (BE) was conceptualized as a moderator, including macro-economic, micro-economic, and ecological factors. Sub-hypotheses (H4a–H4c) were developed to account for contextual conditions that may enhance or constrain the effects of BF on EEIS. Finally, demographic characteristics, including gender, age, education, language proficiency (French and English), entrepreneurial experience, and residency status, were included as control variables to account for individual differences that could influence investment outcomes.

The chapter concluded with the development of the final proposed conceptual model, integrating BF, PM², FL, BE, EEIS and demographic controls. The model provides a holistic explanation of how behavioral tendencies, managerial practices, financial literacy, and environmental conditions interact to influence the investment success of ethnic entrepreneurs. It establishes the theoretical and empirical foundation for the subsequent methodology and data analysis chapters.

3.5. Résumé du Chapitre

Le Chapitre 3 a développé le cadre conceptuel de cette recherche, intégrant les apports théoriques, les preuves empiriques et les résultats qualitatifs afin d'expliquer le succès des investissements des entrepreneurs issus de l'immigration et des minorités ethniques (EEIS). Le chapitre a débuté par l'introduction de la justification du cadre, soulignant l'importance des facteurs comportementaux, managériaux, financiers et environnementaux dans les décisions entrepreneuriales d'investissement en contexte d'incertitude. Il a été précisé que l'approche méthodologique mixte, incluant des entretiens semi-structurés avec des entrepreneurs ethniques, complétait la revue de la littérature pour identifier les constructs, sous-facteurs et relations pertinents.

Le premier composant majeur, la Finance Comportementale (BF), a été conceptualisé comme variable indépendante, comprenant les heuristiques, les facteurs de la théorie des perspectives et les conditions de marché. Chaque dimension a été discutée théoriquement et reliée aux résultats des décisions d'investissement, avec le développement d'une hypothèse principale (H1) et de sous-hypothèses (H1a–H1c) pour capturer ses effets sur l'EEIS. Les pratiques PM² ont été présentées comme médiateur et modérateur, opérationnalisées à travers la Gestion Agile, la Gestion de Portefeuille et la Gestion de Programme, reflétant les stratégies managériales structurées permettant de transformer les tendances comportementales en succès d'investissement (H2–H2c).

Ensuite, la Littératie Financière (FL) a été introduite comme modérateur de la relation BF et EEIS. La FL a été décomposée en compétence, professionnalisme et reconnaissance d'opportunités, avec des sous-hypothèses (H3a–H3c) précisant comment ces dimensions renforcent les effets positifs de la BF sur le succès des investissements tout en atténuant les biais cognitifs. De même, l'Environnement des Affaires (BE) a été conceptualisé comme modérateur, incluant les facteurs macroéconomiques, microéconomiques et écologiques. Les sous-hypothèses (H4a–H4c) ont été développées afin de tenir compte des conditions contextuelles pouvant faciliter ou restreindre les effets de la BF sur l'EEIS. Enfin, les caractéristiques démographiques, incluant le genre, l'âge, le niveau d'éducation, la maîtrise des langues française et anglaise, l'expérience entrepreneuriale et le statut de résidence, ont été intégrées comme variables de contrôle pour tenir compte des différences individuelles susceptibles d'influencer les résultats des investissements.

Le chapitre s'est conclu par le développement du modèle conceptuel final, intégrant la BF, les pratiques PM², la FL, le BE, l'EEIS et les variables de contrôle démographiques. Ce modèle fournit une explication globale de la manière dont les tendances comportementales, les pratiques managériales, la littératie financière et les conditions environnementales interagissent pour influencer le succès des investissements des entrepreneurs ethniques. Il établit la base théorique et empirique pour les chapitres méthodologie et analyse des données qui suivent.

CHAPTER 4: METHODOLOGY OF THE RESEARCH

This chapter describes the research methods and procedures employed to achieve the objectives of the study. It presents the research design, philosophy, approach, and strategy, as well as the population, data collection techniques, instruments used, and methods of data analysis. The aim of this chapter is to provide a clear and systematic explanation of how the research was conducted to ensure the validity and reliability of the findings.

4.1. Research Design of the Study

The success or failure of investment projects undertaken by ethnic entrepreneurs cannot be understood solely through numerical indicators or abstract financial models. Rather, it requires an in-depth appreciation of the social, cultural, and psychological contexts in which these entrepreneurs operate, as well as the structural and managerial frameworks that shape their projects. This study is particularly concerned with how behavioral finance factors influence entrepreneurial decision-making and how project management methodologies, such as the PM² framework, can strengthen or weaken the outcomes of investment projects. Investigating such a multidimensional phenomenon calls for a research methodology that is both comprehensive and flexible.

To address this complexity, the present study adopts a mixed-methods approach. The qualitative component allows the researcher to explore the experiences, perceptions, and challenges faced by ethnic entrepreneurs in their own voices, offering insights into the subtle behavioral, cultural, and contextual factors that influence their investment choices. The quantitative component, by contrast, provides the ability to test relationships statistically, establish patterns across a broader population, and evaluate the mediating and moderating effects specified in the conceptual framework. Taken together, these complementary strands of evidence enable a richer and more nuanced understanding of the research problem than either approach could provide in isolation.

The research problem addressed in this study is inherently complex. On the one hand, the psychological and behavioral dimensions of decision-making, such as cognitive biases, risk perceptions, and motivational drivers, cannot be adequately assessed through quantitative

measures alone. They require qualitative exploration to understand how entrepreneurs perceive and interpret their realities. On the other hand, the relationships proposed in the research model, particularly the mediating role of investment decision quality and the moderating role of PM² methodologies, must be tested empirically using robust statistical techniques. A single methodological approach would therefore be insufficient to capture the multiple layers of influence at play.

Consequently, this study employs a sequential mixed-methods design, in which qualitative findings help to shape and contextualize the quantitative phase, while the quantitative analysis provides a means of validating and generalizing the insights obtained. This dual approach reflects a pragmatic philosophical stance, prioritizing methodological appropriateness over strict adherence to a single paradigm. By combining inductive reasoning (emerging from qualitative data) and deductive reasoning (hypothesis testing through quantitative data), the study is able to generate fresh theoretical insights while simultaneously subjecting them to empirical scrutiny.

This chapter adopts the research onion model (Tsang, 2016) to develop a methodological framework that aligns with the study's objectives. As illustrated in Figure 8, the outermost layer of the research onion is research philosophy, which provides the framework that guides how research is conducted based on assumptions about reality and knowledge (Collis & Hussey, 2013). A research philosophy embodies the fundamental assumptions researchers make about the world, which in turn influence the strategies and methods they employ. Accordingly, the philosophy or paradigm underpinning a study serves as its starting point (Guba et al., 1994). It clarifies key elements of research design, including hypotheses, approaches, methodology, strategies, methods, data collection, and analysis. At each stage, researchers draw on various assumptions, the most significant being ontological, epistemological, and methodological, which shape how they conceptualize and conduct their work (Thietart, 2001).

Ontology, defined as “the science or study of being,” concerns the nature of reality (Blaikie & Priest, 2019). It reflects beliefs about what constitutes fact (Salem, 2017). Ontology is often discussed in terms of objectivism and subjectivism. Objectivism holds that social phenomena and their meanings exist independently of social actors; reality, therefore, exists outside the researcher. Subjectivism, on the other hand, argues that social phenomena and their meanings are constructed

by social actors and continuously shaped through interaction, reality, in this view, is co-created by the researcher (Bell, Bryman, & Harley, 2022).

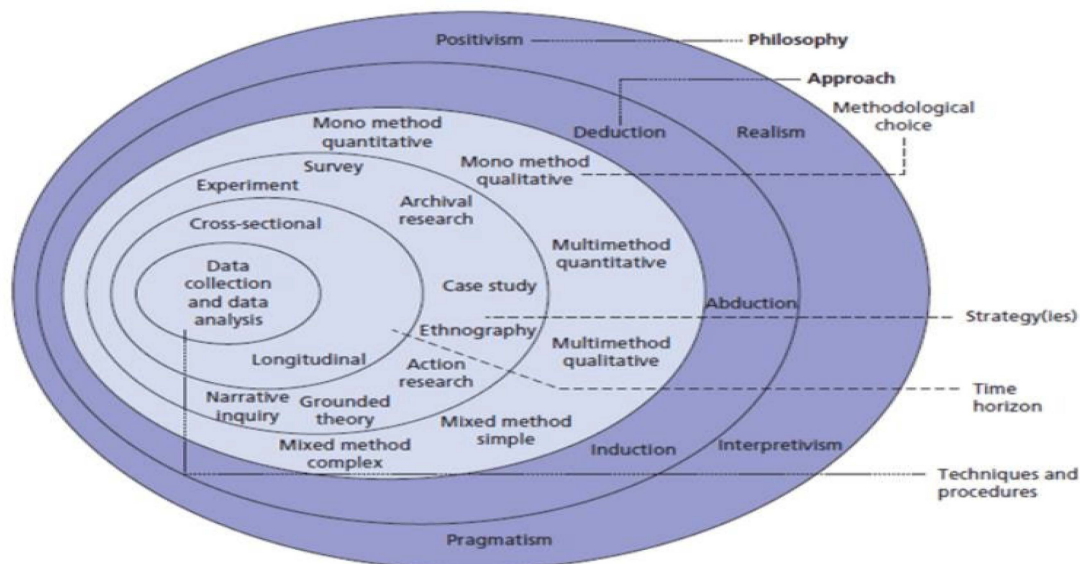


FIGURE 8. RESEARCH ONION

Source: Tsang, 2016

Epistemology, closely linked to ontology, concerns the nature, scope, sources, and limits of knowledge within a field of study (Saunders, Lewis, & Thornhill, 2009). It involves the criteria by which researchers determine what constitutes valid knowledge (Bryman, 2012). The three main epistemological positions are positivism, interpretivism, and realism. Positivism asserts that methods from the natural sciences are appropriate for studying social phenomena, emphasizing objectivity, testing theories, and establishing laws (Walliman, 2006). Interpretivism, by contrast, views reality as subjective and socially constructed, shaped by the researcher's perspectives and experiences (Rogers, 2020). Realism holds that reality exists independently and can be discovered, though our understanding of it may be imperfect (Salem, 2017). Researchers may select from these positions depending on the nature of the social phenomenon under investigation.

The next layer of the research onion addresses research approaches: deductive, inductive, and abductive. Deduction begins with general statements or theories and tests them through logical reasoning. Induction, conversely, derives general conclusions from specific observations (Walliman, 2006). Abduction seeks to overcome the limitations of the other two, combining aspects of both to generate or refine theories (Kovalainen & Eriksson, 2015). Deduction is

typically linked to positivism and quantitative methods, while induction aligns with interpretivism and qualitative methods (Salem, 2017).

The third layer involves the choice of research design: quantitative, qualitative, or mixed methods. Quantitative research emphasizes objectivity, measurement, and statistical analysis, often using surveys, experiments, or secondary data (Rathore, 2019). It generally begins with a theory or hypothesis, which is then tested for validation or rejection (Newman, Benz, & Ridenour, 1998). Thus, quantitative research aligns with positivism, objectivism, and a deductive approach. Qualitative research, by contrast, focuses on non-numerical data to explore concepts, experiences, or social processes in depth, often to generate new insights (Merriam & Grenier, 2019). It is associated with subjectivism, interpretivism, and induction. Mixed methods research combines both quantitative and qualitative approaches, allowing researchers to analyze data from multiple perspectives within a single study (Creswell, 2013).

The inner layers of the research onion, strategies, procedures, and methods, are addressed later in this chapter as part of the detailed research design to maintain focus and avoid unnecessary repetition.

4.2. Research Philosophy and Approach

These are the plans and procedures adopted for research that cut across all steps of the study, from general conceptualization to specific methods of data collection, analysis, and interpretation. Overall, this involves deciding which approach is most suitable for investigating the research problem. This decision is informed by the philosophical assumptions underlying the study, which guide the research design, methods, and interpretation of findings. Selecting the appropriate approach depends on the nature of the research problem, the researcher's experience, and the intended audience of the study (Tenuche, 2018).

In planning the steps to complete this study, an attempt is made to infer and predict general patterns by examining the investment behavior of ethnic entrepreneurs, with the aim of generalizing the findings to a larger population with similar characteristics. This reflects the assumption that part of reality exists objectively and can be measured, which aligns with the positivist paradigm. The researcher uses existing theories and scientific methods to test hypotheses and generate knowledge about social phenomena, specifically ethnic entrepreneurship. Since the

primary goal of positivism is to synthesize general rules for predicting behavior (Fisher & Buglear, 2010), this paradigm is consistent with the quantitative component of the study, where the researcher maintains independence from participants and seeks objective, testable findings. In this context, hypotheses are created to explore external reality, and the findings are intended to be free from personal bias or interpretation.

However, part of the reality under investigation is uncertain or not fully observable, particularly due to gaps in the literature regarding behavioral finance in ethnic entrepreneurship. To explore these unknown dimensions, the study incorporates a qualitative research approach grounded in the interpretive paradigm (Clark & Creswell, 2008; O'Donoghue, 2018). This allows for an in-depth understanding of the meanings, motivations, and experiences of ethnic entrepreneurs that cannot be captured through quantitative methods alone.

To integrate these complementary perspectives, the study adopts a convergent parallel mixed-methods design, guided by the pragmatic paradigm. Pragmatism prioritizes the research question over strict adherence to a single philosophical stance, allowing both quantitative and qualitative methods to coexist and complement each other. This approach enables the collection of quantitative data (from surveys of ethnic entrepreneurs) and qualitative data (from semi-structured interviews with entrepreneurs and investors) simultaneously. The results from both strands are merged during the interpretation phase to identify points of convergence, divergence, contradictions, or relationships between the datasets. Pragmatism thus provides a philosophical justification for using a mixed-methods approach, ensuring that the study can comprehensively address complex research questions.

In the quantitative component, hypotheses are formulated based on existing theories and tested using collected data. Deductive reasoning is applied in this phase, consistent with the positivist paradigm, to examine generalizable patterns in investment behavior (Creswell, Fetter, & Ivankova, 2004; Collis & Hussey, 2013). In the qualitative component, inductive reasoning is used to explore previously unknown realities, uncovering insights directly from participants' experiences. By combining deductive and inductive reasoning, the study employs abductive logic, allowing iterative interaction between theory and empirical data and enhancing both the validity and depth of the findings.

4.3. Research Methodological Choice

Understanding what influences the decisions of immigrant investors, and consequently their success, is a complex task. While some factors affecting their decisions are similar to those in financial markets, significant differences exist between financial and non-financial investment domains. Non-financial assets are those with an economic life that extends beyond the accounting period and are intended for consumption in the normal course of operations. These assets are converted into expenses over future periods and include tangible capital assets, inventories, prepaid expenses, land, buildings, machinery and equipment, vehicles, assets under construction, and other long-term holdings (Government of Canada, 2023).

Although behavioral finance is well-developed in the context of financial markets, there remain substantial theoretical and practical challenges in the study of non-financial investments and ethnic entrepreneurship. This study posits that some factors influencing financial investment decisions may also be applicable to ethnic entrepreneurial ventures; however, due to the lack of well-established theories in this area, it is essential to gather insights directly from ethnic entrepreneurs and immigrant investors. For this purpose, qualitative research methods are employed. Qualitative data focus on concepts, perceptions, and experiences rather than numerical measures, providing in-depth understanding of motivations, decision-making processes, and contextual factors influencing investment behavior.

Simultaneously, a quantitative research approach is applied, aligned with objectivism, positivism, and deductive reasoning. Quantitative research involves the collection and analysis of primary numerical data, which allows for statistical testing and identification of patterns and relationships between variables. Surveys and structured questionnaires are used as tools to investigate the relationship between behavioral finance factors and the success of ethnic entrepreneurial projects (Saunders, Lewis, & Thornhill, 2009; Salem, 2017). Quantitative analysis is particularly suited to this study as it provides reliable and objective evidence that can be generalized to the broader population of ethnic entrepreneurs (Creswell, 2013).

The choice of a mixed-methods design is justified and guided by the pragmatic paradigm, which prioritizes the research question over strict adherence to any single philosophical stance. Pragmatism allows the integration of qualitative and quantitative approaches in a single study, ensuring that both the depth of individual experiences and the generalizability of statistical patterns

are captured. By combining these approaches, the study addresses complex research questions in a comprehensive and flexible manner, overcoming the limitations of relying solely on either qualitative or quantitative methods. Moreover, the pragmatic mixed-methods approach supports efficiency and feasibility in data collection. Large-scale quantitative surveys provide breadth and generalizability, while qualitative interviews provide depth and contextual understanding. Together, they enable a richer and more robust analysis of the factors affecting investment decisions and project success among ethnic entrepreneurs.

4.4. Research Strategy

Research strategy refers to the practical orientation of research, guiding how quantitative, qualitative, or mixed methods are applied (Salem, 2017). Different strategies are chosen based on the research philosophy, approach, and the specific objectives of the study. In this research, the quantitative component is grounded in the positivist paradigm, using deductive reasoning, and is best served by a survey strategy (Wilson Muyinda, 2018). Conversely, the qualitative component relies on the interpretive paradigm, employs inductive reasoning, and adopts a grounded theory approach to explore participants' experiences and perspectives in depth (Creswell, Fetter, & Ivankova, 2004).

There are several reasons for choosing a survey strategy for the quantitative component. First, this study investigates a social phenomenon: the investment behavior of ethnic entrepreneurs, which cannot be directly observed (Bell, Bryman, & Harley, 2022). Surveys provide access to participants' opinions, attitudes, and behaviors in a structured format. Second, the study requires a large dataset to generalize findings to the broader population of ethnic entrepreneurs, which is not feasible with qualitative methods alone (Schmidt, Santurkar, Tsipras, Talwar, & Madry, 2018). Third, surveys offer flexibility in data collection, allowing the use of multiple modes, such as online platforms, email, social media, mobile phones, telephone, and face-to-face interviews, including hybrid methods for hard-to-reach respondents (Salem, 2017).

The qualitative component, by contrast, focuses on understanding the subjective and intersubjective meanings that participants assign to their experiences (Goldkuhl, 2012). Interpretive studies aim to uncover the broader structure of a phenomenon rather than produce generalizable results (Schwartz-Shea & Yanow, 2013). The emphasis is on depth and insight,

providing rich contextual understanding of ethnic entrepreneurs' decision-making and behavioral patterns.

Given that both positivist and interpretive paradigms underpin different parts of this research, and that both quantitative and qualitative approaches are employed, the study adopts pragmatism as the overarching paradigm. Pragmatism prioritizes the research question over strict adherence to a single philosophical stance and supports the integration of multiple methods (Tashakkori & Teddlie, 1998). Although some critiques highlight a perceived lack of epistemological rigor in mixed-methods research (Bryman, 1984; Giddings, 2006), pragmatism has strong philosophical roots in classical pragmatist thought (Johnson & Onwuegbuzie, 2004) and is widely recognized as the most suitable paradigm for justifying mixed-methods approaches (Tashakkori & Teddlie, 1998; Teddlie & Tashakkori, 2003; Rallis & Rossman, 2003). By embracing pragmatism, this study ensures that methodological choices are driven by the research question, allowing both qualitative and quantitative methods to be applied efficiently and effectively.

4.5. Research Methods and Techniques

The choice of research methods and techniques significantly affects the quality and reliability of study findings. This stage includes decisions regarding the population and sample, data collection methods, and data analysis techniques which all discussed in the following.

4.5.1. Participants and samples of the study

In this research, the unit of analysis is immigrant investors or ethnic entrepreneurship. In other words, the study targets individual immigrant investors in Québec who are expected to allocate financial resources in different areas of real assets, including real estate, land, offices, machinery, stores, restaurants, transportation, etc., to generate income and profit. Accordingly, this research does not focus on financial markets or stock exchanges. Similarly, individuals who have opened savings accounts in banks to earn profit, or those who are interested in investment or possess extensive knowledge about it, such as experts, consultants, or students, are not considered part of the study population.

In this study, immigrants who have invested in the form of sole proprietorships, partnerships, or corporations, and who have created employment and income for at least one person, are considered immigrant investors or ethnic entrepreneurs. Hence, the research population is regarded as a large population, and these participants provide data for both quantitative and qualitative research. Since the population is very large, and the high diversity of ethnic entrepreneurs allows the researcher to analyze and compare the financial behavior and investment decisions of different groups based on their characteristics, it is necessary to select samples for the quantitative study. Yamane (1967) suggests that for a population size exceeding 10,000, a sample size of 400 is sufficient to achieve a 95% confidence level with a 5% margin of error ($e = 0.05$) in professional research. In other words, when the research is not constrained by limitations, this logic is justifiable. However, in academic research in the form of a thesis, the researcher faces many limitations, including the extent of the population, as well as time and cost constraints. The researcher must access samples and collect data within these limitations, making it unlikely to strictly follow this guideline.

Furthermore, ethnic entrepreneurs who establish and manage small businesses are themselves directly involved in operational processes and are often very busy. Despite their willingness to participate in the research, they may have difficulty completing questionnaires. Some participants do not check their emails or delete received emails before opening them, while others may misplace or lose hard copy questionnaires. The researcher observed these challenges during the pilot study. For such conditions, alternative formulas have been presented to calculate sample sizes by considering various variables. For example, Cochran's formula (1963) provides a method for calculating the sample for large populations, where "n" represents the sample size, "z" is the z-score, " $\hat{p}$ " is the estimated population proportion, and " ϵ " is the margin of error (confidence interval) (Kadam & Bhalerao, 2010; Taherdoost, 2017).

$$n = \frac{z^2 * \hat{p}(1 - \hat{p})}{\epsilon^2}$$

$$= \frac{1.96^2 \times 0.5(0.5)}{0.1^2} = 100$$

According to Cochran's (1963) formula, the sample size for this study would be 100, based on a desired level of precision ($\epsilon = 0.1$). However, the researcher aimed to increase the number of

participants as much as possible to enhance the validity and reliability of the study and to provide a sufficient dataset for applying robust statistical techniques during data analysis. Table 10 provides additional guidance and illustrates the rationale for selecting the sample size¹.

TABLE 10. SAMPLE SIZE FOR BIG POPULATION

Source: Islam (2018)

Size of Population (N)	Sample Size (n) for Precision (E) of:			
	±3%	±5%	±7%	±10%
500	A	222	145	83
600	A	240	152	86
700	A	255	158	88
800	A	267	163	89
900	A	277	166	90
1,000	A	286	169	91
2,000	714	333	185	95
3,000	811	353	191	97
4,000	870	364	194	98
5,000	909	370	196	98
6,000	938	375	197	98
7,000	959	378	198	99
8,000	976	381	199	99
9,000	989	383	200	99
10,000	1,000	385	200	99
15,000	1,034	390	201	99
20,000	1,053	392	204	100
25,000	1,064	394	204	100
50,000	1,087	397	204	100
100,000	1,099	398	204	100
>100,000	1,111	400	204	100

A = Assumption of normal population is poor. The entire population should be sampled.

For the qualitative component of this study, a smaller, purposive sample was selected to obtain in-depth insights into the investment decision-making processes of ethnic entrepreneurs.

1. In social science research, particularly within management studies, the acceptable margin of error (ϵ) typically ranges from 0.05 to 0.1, with 0.05 being the most commonly adopted standard for ensuring statistical rigor (Cohen, 1988; Saunders, Lewis, & Thornhill, 2019). However, in the context of mixed-methods research, adopting a slightly higher threshold, such as 0.1, can be considered justifiable. This flexibility arises because the qualitative component of the study adds interpretive depth and contextual understanding, complementing and enriching the quantitative findings. By integrating insights from interviews or other qualitative sources, researchers can mitigate some of the limitations associated with a larger margin of error, while still producing robust and meaningful results (Creswell & Plano Clark, 2017).

Unlike the quantitative survey, which seeks generalizability, the qualitative approach aims to explore contextual nuances, experiences, and perspectives that cannot be captured through structured questionnaires alone.

Participants for the qualitative study were chosen based on the following criteria: (1) they are immigrant investors or ethnic entrepreneurs who have actively managed non-financial investment projects, (2) they possess sufficient experience to reflect on their investment behaviors and decision-making processes, and (3) they are willing and able to provide detailed and reflective responses during semi-structured interviews.

The sample size for qualitative research is typically smaller than that for quantitative studies because the goal is not statistical generalization but thematic depth and richness. In this study, interviews were conducted until no new themes or patterns emerged, reaching a total of 23 participants. At this point, the stage of data saturation, or “ghosting”, was achieved, ensuring that the collected data captured a comprehensive and diverse range of experiences and insights. This approach guarantees that the qualitative findings provide a complementary perspective to the quantitative results, revealing subtleties and complexities of ethnic entrepreneurs’ investment behaviors that may be missed in surveys.

4.5.2. Sample selection method

Since the province of Québec, where the population is located, is geographically vast, it was not feasible to study all cities. Therefore, the researcher selected Montreal and its surrounding regions as the focus for this study. To ensure proper distribution of samples, the region was divided into different clusters, allowing for a systematic selection of participants with the assistance of institutions and associations related to immigrants and ethnic businesses. These organizations provided lists containing business characteristics, including type of business, address, phone number, and sometimes email.

A stratified random sampling method was then employed to select participants from these lists. Stratified random sampling was considered appropriate for this study due to the ethnic diversity of the population, as investors from different ethnic backgrounds are likely to exhibit varying financial behaviors and investment decisions. Additionally, the population is not homogeneous and dividing it into subgroups that are more homogeneous individually allows for

better estimates of the overall population and more reliable results (Cr, 2020). In this study, the selection criterion was ethnicity, and within each stratum, random samples were initially drawn, providing an equal chance for all members to be selected (Carson, Carson, & Martin, 1999).

However, initial attempts using random sampling alone resulted in low response rates, prompting the researcher to supplement the process with snowball sampling. This combination allowed for a more efficient and reliable recruitment of participants, as snowball sampling often yields higher response rates, particularly when targeting specific groups such as ethnic entrepreneurs (Muijs, 2004). Snowball sampling also leveraged the networks of selected participants, with each participant introducing subsequent members, facilitating access to a wider range of ethnic entrepreneurs. The methods used to identify and recruit participants included:

1. Utilizing existing lists of ethnic entrepreneurs and immigrant investors obtained from directories and resources provided by associations, institutions, and community organizations related to ethnic groups. Examples of such sources include “the Directory of Ethnocultural Communities and Multicultural Organizations”, “the Directory of Community Services of the Island of Montreal”, and “the Directory of Social and Community Organizations”. These directories provide comprehensive listings of ethnic entrepreneurs, facilitating the researcher’s ability to identify and connect with potential participants. Accessing these lists offers a reliable means of reaching a sufficient number of participants for the study. The researcher has previously engaged with some of these organizations; however, initial access required obtaining an ethics certificate. Relevant links for these directories are <https://www.211qc.ca/en/directory>. Figures 9 and 10 show a portion of the communities listed in these directories and examples of their content.

2. Other resources were also utilized to identify and reach immigrant investors and ethnic entrepreneurs. Examples of these resources include:

- Quebec Business Listings, (<https://www.fslocal.com/cities/ca/qc/laval/>)
- Montreal Business Directory (<https://qc.allpages.com/montreal/>),
- Montreal local small business (<https://montreal-west.ca/en/our-town/town-profile-history/local-businesses/>)
- Directory of entrepreneurship support organizations (<https://entrepreneureici.org/en/>)
- Yellow page (<https://solutions.yp.ca/digital-marketing/desktop-ypca>)
- Others that used as needed.

FIGURE 9. LIST OF ETHNICAL COMMUNITIES IN QUEBEC

ETHNOCULTURAL COMMUNITIES	
African Community.....	1
Afro-Asian Community.....	2
Arab Community.....	3
Armenian Community.....	4
Bangladeshi Community.....	8
Black English-Speaking Community.....	9
Bolivian Community.....	12
Chinese Community.....	13
First Nations & Inuit Communities.....	16
French Community.....	17
Greek Community.....	18
Grenadian Community.....	20
Guyanese Community.....	22
Haitian Community.....	23
Hungarian Community.....	26
Iranian Community.....	27
Irish Community.....	28
Italian Community.....	29
Jamaican Community.....	31
Jewish Community.....	32
Muslim Community.....	36
Portuguese Community.....	37
Spanish Community.....	38
Sri Lankan Community.....	39
Turkish Community.....	40
Ukrainian Community.....	41
MULTICULTURAL COMMUNITIES/ORGANIZATIONS	
Chinese Neighbourhood of Montreal.....	42
External Manpower Services.....	43
Halfway House Service.....	44
Montreal Centre for Social-Cultural Action.....	45
Montreal Women's Centre.....	46
Multicultural Liaison and Assistance Forum.....	47
Notre-Dame de Grâce Multi-Ethnic Centre.....	48
Project Genesis.....	49
The Alliance of Cultural Communities for Equality in the Health and Social Services...	50
Training Program for Visible Minorities.....	51
Women's Africa.....	52
YMCA – Centre-Ville (Young Men's Christian Association).....	53

FIGURE 10. LIST OF ETHNICAL COMMUNITIES IN QUEBEC

African Community	Iranian Community
Association of African Artists 1. Objectives: - To bring together artists from various ethnic communities, - To serve the ethno cultural community. 2. Programs/Services: - Training programs in the arts (pottery, percussion, painting, typography, computer graphics--fees may apply to some courses), - Orientation and customized introductory courses, - Preparation of curriculum vitae and letter of introduction, - Telephone calls (not collect). 3. Languages spoken other than English and French: - Nil Mr Maurice Lwambwa-Tchany Director Mr Taki Ebwenze Coordinator  (514) 272-5117 911 Jean-Talon Street East, Suite 118 Montréal, Quebec H2R 1V5  (514) 728-3417	Iranian Cultural and Community Centre 1. Objective: - To serve the Iranian community. 2. Programs/Services: - Welcome, accompaniment, information, orientation, - Interpretation and translation, - Social support services, - Free French courses, - Telephone calls (not collect). 3. Languages spoken other than English and French: - Farsi, Persian Mr. Rafat Danefsh Director General Mr. Dolatshari Mahdi Assistant Director / Resource 3680 Jeanne-Mance Street, Suite 323 Montréal, Quebec H2X 2K5  (514) 842-4626 Fax: (514) 842-1197

3. Given that ethnic entrepreneurs are often busy and may be less responsive to online surveys, the researcher adopted a face-to-face approach by visiting participants at their places of business to distribute and collect the questionnaires. Rather than sending the questionnaires via email, the researcher personally engaged with each participant, explained the purpose of the study, and invited them to take part. In addition to using the previously prepared lists of ethnic entrepreneurs from directories and associations, the snowball sampling method was also employed to reach additional participants through referrals. Voluntary participation and the completion of the questionnaire served as an indication of informed consent. Participants were also provided the option to mark or sign the first page of the questionnaire to formally indicate their agreement to participate.

4.5.3. Data collection method

Data collection is a critical stage in research, as it significantly contributes to the reliability and overall validity of the study (Saunders, Lewis, & Thornhill, 2009). All procedures within the data collection stage must align with the research design to ensure the accuracy and credibility of the results. In this study, primary data were collected using surveys and interviews. Primary data refer to information gathered firsthand by the researcher, particularly in contexts where secondary data are unavailable or insufficient (Hox & Boeije, 2005). This data type was essential for investigating the relationship between behavioral finance factors and the success of ethnic entrepreneurs' investment projects, including the moderated-mediation role of PM². Moreover, primary data helped identify the key motivations and drivers behind investors' decisions, as well as the reasons why these decisions can often be irrational, even when investors are aware of their impact on project outcomes.

The data collection methods employed in this study included questionnaires for the quantitative component and in-depth interviews for the qualitative component. The questionnaire was distributed both online and in hard copy to a large sample of participants covering a wide geographical area. Survey-based questionnaires are typically received "cold," without prior contact between the researcher and respondents, which often results in low response rates (Baldegger et al., 2021). To address this issue, a large sample of ethnic entrepreneurs and immigrant investors was targeted to (a) ensure that the demographic profile of respondents

reflected the survey population, and (b) provide a sufficiently large dataset for robust statistical analysis.

Online surveys are among the most commonly used data collection methods due to their cost-effectiveness and ability to generate prompt responses compared to postal surveys (Fricker & Schonlau, 2002). However, researchers are advised to assess the suitability of online surveys for the specific research topic, as excessive reliance on digital methods may result in survey fatigue among participants (Naus, Phillip & Samsi, 2009; Witte, 2009). Additionally, online surveys may raise concerns regarding data validity, sampling accuracy, and survey design, implementation, and evaluation (Tenuche, 2018). To mitigate these limitations, the researcher also employed in-person visits to participants' businesses, distributing and collecting questionnaires directly.

The questionnaire was developed based on the key factors and components identified in the conceptual model of the study (see Appendix 3). Its structure and content were guided by the operationalization of the conceptual framework, ensuring comprehensive coverage of the study's main themes, factors, and variables. Established models and authoritative sources were used to identify the factors and variables forming the basis of the questionnaire. One of the most influential models is Shefrin's (2000) framework, which classifies behavioral biases into heuristic-based biases and framework-dependent biases, widely applied in prior research. Building on Shefrin (2000), other scholars, and insights from the qualitative component of this study, behavioral finance factors affecting ethnic entrepreneurs' investment decisions were categorized into three main groups: heuristic biases, prospect theory biases, and market condition influences.

In addition, since this research focuses on ethnic entrepreneurship, which primarily involves investment in real and tangible assets, the decision-making criteria leading to success differ significantly from those used by investors in financial markets. In this context, non-financial criteria are considered alongside traditional financial and investment return measures, reflecting the broader goals and values that often guide ethnic entrepreneurial decisions. To develop these criteria, the models proposed by Elmassah et al. (2022) and Shenhar et al. (2007) were initially used as primary references. These models guided the identification of key factors, including project efficiency and performance, customer impact, business success, and future readiness. Subsequently, the findings from the qualitative study were distilled into five core factors,

performance, sustainability, adaptation, satisfaction, and social impact, along with ten specific measurement items.

The decision-making construct in this study was operationalized using five dimensions widely recognized in the literature: rationality, opportunity recognition, resource utilization, risk tolerance, and strategic orientation (Deligianni et al., 2016; Kavčič et al., 2010; Dean & Sharfman, 1996). These dimensions capture core aspects of entrepreneurial cognition and behavior, reflecting how ethnic entrepreneurs evaluate opportunities and make investment decisions. Rationality emphasizes systematic evaluation of alternatives (Hernandez et al., 2019), opportunity recognition addresses the identification and exploitation of emerging prospects (Shane & Venkataraman, 2000), resource utilization reflects efficient mobilization of tangible and intangible assets (Jancenelle et al., 2021. Andrews et al., 2012), risk tolerance captures the willingness to engage in uncertain but potentially rewarding ventures (Ainia et al., 2019), and strategic orientation highlights the long-term, goal-directed posture adopted to sustain competitiveness (Uzoamaka et al., 2020).

Additionally, to identify the factors and variables related to PM2 methodology, the researcher relied on the following key sources: PM2 – Project Management Methodology Guide 3.0.1, PM2 – Agile Management Guide 3.0.1, PM2 – Program Management Guide 0.1, and PM2 – Portfolio Management Guide 1.5, which are the only available comprehensive references in this domain. To assess investors' financial literacy, the study employed a coherent model adapted from Suresh (2021), which focuses on three dimensions: financial competence, financial proficiency, and financial opportunity. Financial competence refers to the acquisition of relevant knowledge about various financial products (Shobha & Shalini, 2015). Financial proficiency relates to the ability to apply this knowledge effectively to make informed financial decisions (Hilgert et al., 2003). Finally, financial opportunity emphasizes that a financially literate investor should have access to investment opportunities and the ability to generate returns on these investments.

Moreover, several key aspects were considered in the development of the questionnaire. First, clarity and visual presentation were prioritized. A self-completion questionnaire must have a layout that is visually appealing and easy to navigate, with an organized outline and legible font to facilitate respondent engagement. The questionnaire included closed-ended answers arranged vertically for online surveys and horizontally for paper-based versions. Research suggests that

vertical formatting is generally preferred, as horizontal arrangements can sometimes cause confusion when both options are feasible (Sudman & Bradburn, 1982). Additionally, a 5-point Likert scale was employed as the rating system, allowing respondents to indicate the intensity of their opinions across five response options, ranging from strong agreement to strong disagreement, including a neutral midpoint. In some items, the scale ranged from very little to very much, enabling nuanced feedback. One advantage of using closed-ended questions is that they can be pre-coded (Bryman & Bell, 2015), which simplifies the process of preparing the data for computer-based analysis. For example, the survey items were scored as follows:

Very little Very high Strongly disagree 1	Little High Disagree 2	Average Average Neither agree nor disagree 3	Much Little Agree 4	Very much Very little Strongly agree 5
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On the other hand, interviews served as the primary tool for data collection in the qualitative component of this study. In-depth, semi-structured interviews were conducted to allow flexibility in exploring participants' experiences while ensuring that all relevant topics were covered. The interviews began with general questions about the background and business activities of ethnic entrepreneurs, followed by targeted questions regarding their investment decisions, motivations, and the behavioral finance factors influencing these decisions.

All interviews were transcribed verbatim to preserve the authenticity of participants' responses. The transcripts were then systematically analyzed using a coding process. Initially, open codes were identified by breaking down the text into meaningful units of information. These codes were carefully reviewed, and those conceptually related were grouped into axial codes, reflecting broader patterns and relationships within the data. Finally, axial codes were further synthesized into selective codes, representing the overarching themes that captured the essence of the participants' experiences and decision-making processes (Creswell, 2012). This iterative process of coding and reduction continued until thematic saturation was reached, when no new insights or categories emerged from the interviews. In this study, saturation was achieved after 23 interviews, ensuring that the qualitative data adequately captured the diversity and depth of experiences among ethnic entrepreneurs.

Figure 11 illustrates the triple coding path used in this study, showing the progression from open codes to axial codes and finally to selective codes, which formed the final qualitative

categories. This method allowed for a rigorous and systematic exploration of the factors influencing investment decisions while maintaining the richness of participants' perspectives.

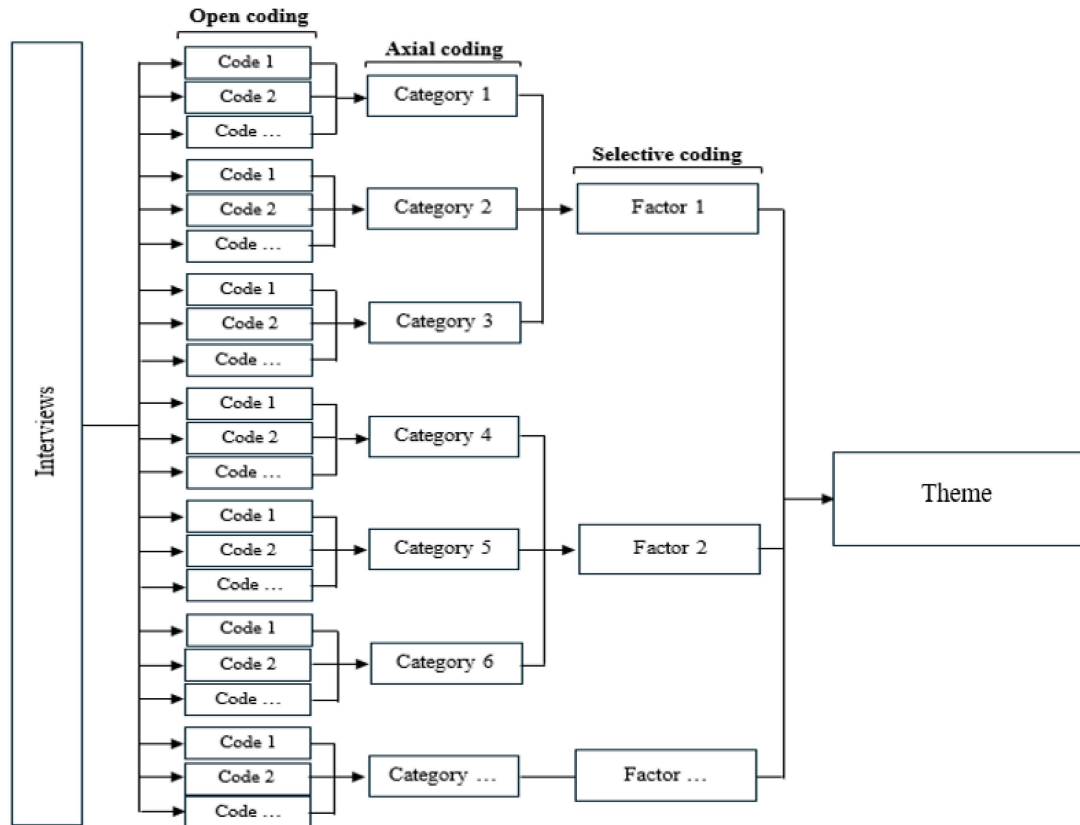


FIGURE 11. THE PROCESS OF CODING

Source: The researcher

The full process of data extraction, coding, and analysis of qualitative data, as well as quantitative data, is presented in detail in the next chapter.

4.5.4. Validity and Reliability

1. Validity and reliability- quantitative study: Validity refers to the extent to which an instrument accurately measures what it is intended to measure (Bryman & Bell, 2015; Hair et al., 2019). Establishing validity is essential for ensuring that the conclusions drawn from statistical analyses reflect the true nature of the constructs under investigation rather than measurement error. Several dimensions of validity are commonly discussed in quantitative research, and this study

particularly emphasizes content validity and construct validity, which includes convergent and discriminant validities.

Content validity concerns whether the measurement instrument adequately represents all aspects of the concept being studied (Sekaran & Bougie, 2016). In this research, content validity is ensured by combining established theoretical models with the outputs of the qualitative study. Specifically, items were derived from Shefrin's (2000) model of behavioral biases, the PM2 methodology guides, Suresh's (2021) model of financial literacy, and the project success frameworks of Shenhar et al. (2007) and Elmassah et al. (2022). In addition, insights generated from in-depth interviews with ethnic entrepreneurs were used to refine and expand the measurement items, ensuring that the instrument not only reflects validated theoretical constructs but also captures the lived experiences and contextual nuances of the target population. This approach guarantees that the questionnaire covers the full range of relevant dimensions.

Construct validity refers to the extent to which measurement items accurately represent their intended theoretical constructs (Hair et al., 2012). In this study, construct validity is assessed through convergent validity and discriminant validity. To support construct validity, Exploratory Factor Analysis (EFA) is first conducted to examine whether the items load appropriately on the relevant factors, providing evidence that the observed variables reflect the intended latent constructs. Convergent validity is then assessed to ensure that items measuring the same construct are strongly correlated, while discriminant validity is examined to confirm that constructs are distinct from one another. In addition to these statistical procedures, construct validity is reinforced through insights from the qualitative phase, which helped refine and contextualize the items. Together, these approaches demonstrate that the measurement instruments are aligned with the theoretical framework, including behavioral finance factors, decision-making dimensions, PM2 practices, and financial literacy, while also reflecting the lived experiences of ethnic entrepreneurs.

Reliability refers to the degree to which a research instrument, such as a questionnaire, produces consistent and stable results under different circumstances, assuming that no other changes occur. In quantitative studies, reliability is often conceptualized as the proportion of variability in a measured score that is due to true differences among respondents rather than measurement error (Roberts et al., 2006). For instance, a reliability coefficient of 0.8 indicates that

80% of the observed variance reflects the true score, while the remaining 20% may be attributed to random error (Charter & Feldt, 2001; Tenuche, 2018).

Reliability can be assessed in several ways. Inter-rater reliability evaluates whether different individuals using the same instrument obtain similar results, while test-retest reliability examines whether the instrument produces consistent outcomes when administered at different times. Ensuring reliability is critical in both quantitative and mixed-methods research, as it underpins the trustworthiness and replicability of the study's findings.

In this research, reliability was supported through multiple steps. Before full-scale data collection, the survey instrument underwent pretesting to enhance clarity, logical flow, and respondent comprehension. Ten individual familiars with the field of small businesses and ethnic entrepreneurship, including PhD students, business owners, professors, and field experts, participated in the pretest. Feedback from this phase led to modifications in some constructs and survey items, improving question clarity, structure, and overall comprehensibility. These refinements helped strengthen the reliability of the instrument, which was subsequently confirmed through Cronbach's alpha and other statistical analyses presented in the following chapter.

Additionally, the design of the questionnaire prioritized reliability. Questions were kept short, clear, and direct to minimize misunderstandings, and structured multiple-choice formats were used to reduce ambiguity and increase response accuracy. Cultural and demographic diversity among participants was considered in wording choices to ensure that questions were easily understood across different backgrounds. Measures such as guaranteeing anonymity, preserving participant identity, and obtaining informed consent further supported participant engagement and the integrity of responses.

To statistically assess reliability, the study applied Cronbach's alpha, a widely recognized measure of internal consistency. The exploratory analysis confirmed that all constructs achieved a Cronbach's alpha above the minimum threshold of 0.7, indicating satisfactory reliability. These results, presented in detail in the following chapter, demonstrate that the research instrument consistently measures the constructs of interest and provides dependable data for subsequent analysis.

2. *Validity and reliability- qualitative study:* In qualitative research, the concepts of validity and reliability are addressed through trustworthiness and rigor, rather than the statistical measures

used in quantitative research (Golafshani, 2003). Trustworthiness ensures that the findings accurately and credibly reflect the phenomena under study, while rigor ensures that the research process is systematic, transparent, and dependable.

Content validity of the qualitative instrument was established using two indices: the Content Validity Ratio (CVR) and the Content Validity Index (CVI) (Prananto et al., 2022). The CVR assesses the degree to which experts agree that individual items are essential for representing the construct, with values ranging from -1 to +1. In this study, seven experts from the fields of entrepreneurship, management, administration, psychology, sociology, economics, and IT confirmed a CVR of 0.87, indicating strong consensus on item relevance. The CVI, calculated as the average of CVRs for all items, evaluates the overall representativeness of the instrument. A CVI value of 0.80 or higher is considered acceptable; in this study, the CVI was 0.83, demonstrating that the instrument adequately represents the content domain. These expert validations contributed significantly to the credibility and dependability of the qualitative data collection instrument.

Credibility was further enhanced through triangulation, involving multiple sources of data such as interviews, observations, and field notes. Participants were ethnic entrepreneurs with diverse backgrounds, ensuring that multiple perspectives were captured. Triangulation reduces potential researcher bias and ensures that interpretations are grounded in participants' experiences rather than assumptions (Denzin, 1978). In addition, dependability was strengthened by maintaining a clear audit trail documenting all stages of the research process, including interview protocols, transcription procedures, coding frameworks, and analytical decisions. This transparency allows other researchers to understand, review, and potentially replicate the procedures, ensuring consistency over time.

Confirmability was addressed by maintaining reflexive notes throughout the study. The researcher continuously reflected on personal assumptions, biases, and the influence of their perspective on data collection and analysis, ensuring that the findings were grounded in participants' experiences rather than the researcher's predispositions. Furthermore, transferability was considered by providing detailed contextual descriptions of participants and the research setting. Thick descriptions of the ethnic entrepreneurship environment were provided, enabling readers to determine whether the findings may be applicable to other contexts or populations.

Finally, pretesting and piloting of interview protocols contributed to the reliability and rigor of the qualitative data. Questions were reviewed by experts and pretested with a small group of participants to ensure clarity, relevance, and logical flow. Feedback from this phase led to refinements in wording and sequence, improving both the comprehensibility of the questions and the overall quality of data collection. Overall, the combination of expert validation (CVR and CVI), pretesting, triangulation, reflexive practices, and systematic documentation ensures that the qualitative component of this mixed-methods study is trustworthy, rigorous, and reliable. These measures provide confidence that the findings accurately capture the experiences, behaviors, and perspectives of ethnic entrepreneurs, while also reflecting the constructs and theoretical framework of the study.

4.5.6. The data analysis methods

The data analysis process in this mixed-methods research was designed to ensure methodological rigor and alignment between the study's objectives, research questions, and hypotheses. As the study integrates both quantitative and qualitative strands, the analysis followed a sequential explanatory design, in which quantitative analysis provided the primary empirical test of the conceptual model, and qualitative insights were used to enrich the interpretation and contextual understanding of the findings.

Accordingly, the data analysis was conducted in two complementary phases. The quantitative phase employed statistical techniques based on Structural Equation Modeling (SEM) using Smart PLS 4 and supported by SPSS 27 for data preparation, descriptive statistics, and preliminary diagnostics. This phase aimed to validate the measurement model and test the hypothesized relationships among Behavioral Finance (BF), PM² practices, Financial Literacy (FL), Business Environment (BE), and Ethnic Entrepreneurs' Investment Success (EEIS).

The qualitative phase focused on the thematic interpretation of semi-structured interviews conducted with ethnic entrepreneurs, which helped identify, refine, and interpret the behavioral and managerial mechanisms underpinning the quantitative results. This dual approach enabled the triangulation of data sources and analytical perspectives, thereby increasing the validity, depth, and explanatory power of the study's conclusions.

1. Quantitative Data Analysis: The quantitative analysis phase constituted the core empirical component of this research and was designed to validate the measurement and structural models developed in Chapter 3. It also aimed to test the hypothesized relationships among Behavioral Finance (BF), PM² practices, Financial Literacy (FL), Business Environment (BE), and Ethnic Entrepreneurs' Investment Success (EEIS). Given the complexity of the proposed model and the moderate sample size of 183 participants, Partial Least Squares Structural Equation Modeling (PLS-SEM) was selected as the most appropriate analytical approach.

PLS-SEM, implemented using Smart PLS version 4, was adopted because it is particularly suitable for exploratory and predictive studies that involve complex models with multiple latent constructs, non-normal data distributions, and relatively small sample sizes. Unlike covariance-based SEM (CB-SEM), which emphasizes model fit and requires large samples and multivariate normality, PLS-SEM focuses on maximizing explained variance (R^2) and assessing predictive relevance (Q^2). This makes it especially appropriate for behavioral and entrepreneurial research contexts, where the main objective is to explore and explain relationships among constructs rather than to confirm a pre-established theory. Furthermore, PLS-SEM provides robust analytical procedures for testing higher-order constructs, as well as mediation and moderation effects, key features in the present study given the dual mediator–moderator role of PM² and the moderating roles of Financial Literacy and Business Environment.

Before the main analysis, quantitative data were carefully prepared and screened using SPSS version 27. Data validation and cleaning were first conducted to identify and manage missing values, outliers, and inconsistencies. Cases with substantial missing data were excluded, while limited missing responses were replaced using mean substitution to maintain data integrity. Outliers were examined through both univariate (z-scores) and multivariate (Mahalanobis distance) procedures. Although PLS-SEM does not impose strict normality assumptions, the normality of data distribution was assessed through SPSS. Descriptive analyses were also performed to summarize the demographic characteristics of respondents, such as gender, age, education, language proficiency, entrepreneurial experience, and residency status, which were subsequently used as control variables in the structural model.

The data analysis proceeded in two major stages: evaluation of the measurement model and evaluation of the structural model. The measurement model was first assessed to ensure that all

constructs exhibited adequate reliability and validity. Indicator reliability was confirmed through outer loadings greater than 0.70, while internal consistency reliability was verified using Cronbach's alpha and composite reliability (CR) values exceeding 0.70. Convergent validity was assessed by examining the Average Variance Extracted (AVE), where all constructs achieved values above the recommended threshold of 0.50. Discriminant validity was confirmed using both the Fornell–Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio, with all results falling below the critical value of 0.85, indicating satisfactory construct distinction.

Once the measurement model was established, the structural model was evaluated to test the hypothesized relationships among constructs. Collinearity diagnostics using Variance Inflation Factor (VIF) values below 5 indicated no serious multicollinearity issues. Path coefficients and their corresponding t-values were obtained through a bootstrapping procedure with 5,000 resamples, allowing for robust significance testing of both direct and indirect relationships. The explanatory power of the model was assessed using the coefficient of determination (R^2), while the effect sizes (f^2) were calculated to determine the relative contribution of each predictor variable. Predictive relevance (Q^2) was assessed through blindfolding procedures, confirming the model's predictive accuracy.

Mediation and moderation analyses were conducted through bootstrapping-based indirect effect testing and interaction-term modeling within Smart PLS. Specifically, PM² was examined as both a mediator and a moderator between Behavioral Finance and EEIS, while Financial Literacy and Business Environment were modeled as moderators. The inclusion of these effects allowed for a deeper understanding of how behavioral, managerial, and contextual variables jointly shape investment success among ethnic entrepreneurs.

All quantitative analyses were guided by a conventional significance level of $p < 0.05$, and bias-corrected confidence intervals were calculated through bootstrapping to enhance the robustness and precision of the findings. The combination of SPSS and Smart PLS provided a complementary analytic framework: SPSS facilitated descriptive and preliminary analyses, data preparation, and normality testing, whereas Smart PLS enabled comprehensive model estimation and hypothesis testing.

In summary, the quantitative data analysis adopted a systematic, multi-stage approach that integrated classical statistical procedures with advanced structural modeling. This approach

ensured rigorous validation of the constructs and reliable testing of the theoretical relationships proposed in Chapter 3, thereby providing a solid empirical foundation for interpreting the results and drawing meaningful conclusions about ethnic entrepreneurs' behavioral and managerial dynamics.

2. *Qualitative Data Analysis:* For the qualitative phase of this research, data were analyzed using conventional qualitative content analysis, a systematic and flexible approach suitable for exploratory studies that aim to generate categories and concepts directly from empirical data rather than from pre-existing theoretical assumptions (Drisko & Maschi, 2016; Krippendorff, 2018). This method was particularly appropriate for this research because the behavioral and managerial processes underlying ethnic entrepreneurs' investment decisions remain relatively underexplored in the literature. By emphasizing inductive reasoning, qualitative content analysis allowed for the emergence of rich, grounded insights that complemented and informed the quantitative phase of the study.

Following the procedure outlined by Hsieh and Shannon (2005), the analysis began with multiple readings of the interview transcripts to achieve immersion and holistic understanding. Initial open coding was then carried out line by line to identify meaningful units of text that reflected relevant ideas, perceptions, or behavioral patterns. These preliminary codes were subsequently refined and grouped into higher-order categories through an iterative process of comparison and abstraction. In this phase, axial coding was applied to explore conceptual connections between codes and to identify the relationships that formed broader thematic clusters (Creswell, 2013). Duplicate or overlapping codes were merged, while distinct subcategories were retained or created to enhance analytical precision.

Once the coding framework was established, pattern matching techniques were employed to identify recurring configurations within the data and to compare them against theoretical propositions drawn from the behavioral finance and ethnic entrepreneurship literatures. This analytical step helped to bridge inductively derived insights with established theoretical constructs, ensuring both empirical grounding and conceptual coherence. Throughout this process, NVivo software was used to manage data, document analytic decisions, and ensure transparency in coding and theme development.

A cross-cutting or transversal theme that consistently emerged from the data was the dynamic interaction between behavioral tendencies (such as heuristics, optimism, and loss aversion) and managerial adaptations (such as agile and portfolio management practices). These findings directly contributed to the refinement of the conceptual model by providing empirical justification for including behavioral finance constructs, PM² managerial practices, financial literacy, and business environment as key variables influencing Ethnic Entrepreneurs' Investment Success (EEIS).

Overall, the qualitative content analysis enabled the development of theoretically informed yet empirically grounded categories that illuminated how ethnic entrepreneurs interpret, adapt, and act under conditions of uncertainty. The results of this phase not only guided the design of the quantitative survey but also provided interpretive depth for understanding the statistical outcomes of the Structural Equation Modeling (SEM) analysis.

4.6. Ethical Considerations

Ethical considerations are a fundamental aspect of this research, ensuring that the rights, dignity, and welfare of all participants are respected throughout the study. The researcher adhered to the highest ethical standards in line with university regulations, national guidelines, and international research ethics principles. Prior to data collection, the researcher obtained ethical approval from the relevant ethics committee at the university. This process involved submitting a detailed research protocol outlining the study objectives, methodology, participant recruitment procedures, data management strategies, and measures to protect participants' confidentiality and privacy. Only after receiving formal ethical clearance were the data collection activities initiated.

Informed consent (Appendix 1) was obtained from all participants before their participation in the study. Each participant was provided with clear information regarding the purpose of the research, the voluntary nature of participation, the expected duration of their involvement, and the potential risks and benefits of participation. Participants were explicitly informed that they could withdraw from the study at any time without any consequences, and their decision to participate or withdraw would be fully respected. To ensure confidentiality and anonymity, participants' personal identifiers were removed from all datasets, and pseudonyms or codes were used in place of real names during data analysis and reporting. All digital data were stored on secure, password-

protected devices, and access was restricted to the researcher and authorized personnel only. Hard copies of questionnaires, consent forms, and interview transcripts were stored securely.

Additional ethical safeguards were applied to both the quantitative and qualitative components of the study. For the survey, care was taken to phrase questions respectfully and avoid sensitive or intrusive topics. For interviews, participants were provided with a safe and comfortable environment to freely express their views and experiences. Any potential discomfort or distress arising during discussions was handled sensitively, and participants were given the opportunity to pause or terminate the interview if needed.

Given the mixed-methods design, the researcher ensured that ethical principles were applied consistently across both quantitative and qualitative data collection and analysis. This included carefully integrating survey and interview data while preserving participants' anonymity and confidentiality, ensuring that individual responses could not be linked across datasets. The informed consent process explicitly covered both parts of the study, and participants were assured that their data would be used solely for research purposes. Special attention was paid to maintaining the trust and comfort of participants throughout the study, ensuring ethical integrity across all stages of the mixed-methods approach.

Finally, the researcher ensured responsible and transparent reporting of findings. Results were reported accurately, without fabrication, falsification, or misrepresentation, and participants' privacy was maintained in all publications or presentations arising from this research. Overall, by following formal ethical approval procedures, obtaining informed consent, maintaining confidentiality, and adhering to principles of integrity and respect, this study upholds the highest standards of research ethics, ensuring that the rights and well-being of all participants are protected.

4.7. Summary of Chapter 4

Chapter 4 has presented a detailed account of the research methodology and data analysis strategy employed in this study, highlighting the rationale, design, and procedures that underpin the investigation of ethnic entrepreneurs' investment success in Québec. Recognizing the multidimensional and context-dependent nature of the research problem, the study adopts a pragmatic philosophical stance and a sequential mixed-methods design, combining qualitative and quantitative approaches to provide both depth and generalizability. The qualitative phase, based

on semi-structured interviews with 23 ethnic entrepreneurs (based on interview guide-appendix 2), offered rich insights into behavioral, managerial, and contextual factors shaping investment decisions, enabling the identification of key constructs, sub-factors, and patterns that informed the development of the conceptual model. The quantitative phase, conducted through a structured questionnaire with 183 respondents, facilitated the empirical validation of hypothesized relationships using Structural Equation Modeling (PLS-SEM), complemented by descriptive and preparatory analyses in SPSS 27.

The chapter also elaborated on the research strategy, population, and sampling procedures, detailing the focus on Montreal and surrounding regions and the use of stratified random sampling supplemented by snowball sampling to address the ethnic diversity of the entrepreneurial population and ensure sufficient representation. Data preparation, screening, and analysis steps were described comprehensively for both qualitative and quantitative strands, including thematic coding for qualitative data and measurement and structural model evaluation for quantitative data. The integration of these two strands allowed for triangulation of findings and strengthened the validity, reliability, and interpretive richness of the results.

In conclusion, Chapter 4 establishes the methodological rigor and analytical foundation for the study. By combining inductive insights from qualitative exploration with deductive hypothesis testing in quantitative analysis, the chapter demonstrates how the research is designed to capture the complex interplay of behavioral finance factors, PM² managerial practices, financial literacy, and business environment conditions in shaping ethnic entrepreneurs' investment success. This robust methodological framework provides a solid basis for interpreting the results presented in Chapter 5 and ensures that the conclusions drawn are both empirically grounded and theoretically meaningful.

4.8. Résumé Du Chapitre 4

Le chapitre 4 présente de manière détaillée la méthodologie de recherche et les méthodes d'analyse des données utilisées dans cette étude, en mettant en évidence la logique, le design et les procédures qui soutiennent l'investigation du succès des investissements des entrepreneurs issus de minorités ethniques au Québec. Conscient de la complexité multidimensionnelle et contextuelle du problème de recherche, l'étude adopte une approche pragmatique et un design séquentiel à

méthodes mixtes, combinant approches qualitatives et quantitatives afin d'apporter à la fois profondeur et généralisation. La phase qualitative, basée sur des entretiens semi-structurés avec 23 entrepreneurs ethniques, a permis de recueillir des informations riches sur les facteurs comportementaux, managériaux et contextuels influençant les décisions d'investissement, et a contribué à l'identification des principaux concepts, sous-facteurs et modèles qui ont alimenté le développement du modèle conceptuel. La phase quantitative, réalisée à l'aide d'un questionnaire structuré auprès de 183 répondants, a permis de valider empiriquement les relations hypothétiques grâce à la modélisation par équations structurelles (PLS-SEM), complétée par des analyses descriptives et préparatoires via SPSS 27.

Le chapitre détaille également la stratégie de recherche, la population et les procédures d'échantillonnage, en précisant la concentration sur Montréal et ses environs, ainsi que l'utilisation d'un échantillonnage aléatoire stratifié complété par un échantillonnage boule de neige afin de refléter la diversité ethnique de la population entrepreneuriale et de garantir une représentativité suffisante. Les étapes de préparation, de nettoyage et d'analyse des données ont été décrites pour les deux volets de l'étude, incluant le codage thématique pour les données qualitatives et l'évaluation des modèles de mesure et structurels pour les données quantitatives. L'intégration de ces deux volets a permis une validation croisée des résultats, renforçant la crédibilité, la fiabilité et la richesse interprétative des conclusions.

En conclusion, le chapitre 4 établit la rigueur méthodologique et la base analytique de l'étude. En combinant les perspectives inductives issues de l'exploration qualitative avec les tests d'hypothèses deductifs de l'analyse quantitative, le chapitre démontre comment la recherche a été conçue pour saisir l'interaction complexe des facteurs de finance comportementale, des pratiques managériales PM², de la littératie financière et des conditions environnementales dans le succès des investissements des entrepreneurs ethniques. Ce cadre méthodologique robuste fournit une base solide pour l'interprétation des résultats présentés au chapitre 5 et garantit que les conclusions sont à la fois empiriquement fondées et théoriquement significatives.

CHAPTER 5: DATA ANALYSIS

This chapter presents the analysis of the data collected through the mixed-methods approach employed in this study. As outlined in the methodology, the research is guided by the pragmatic paradigm and adopts a mixed-methods design that integrates qualitative and quantitative components to provide a comprehensive understanding of ethnic entrepreneurs' financial behaviors, decision-making processes, financial literacy, PM2- methodology and business success.

The analysis begins with the qualitative component, conducted through content and thematic analysis of the interview data. This approach enables the identification of recurring themes, nuanced perspectives, and contextual insights that enrich the interpretation of the quantitative findings. The qualitative component not only supports the quantitative results but also extends them, offering a deeper understanding of participants lived experiences and interpretations. The quantitative analysis follows, employing structural equation modeling (SEM) with the use of SPSS and Smart PLS. This section focuses on descriptive statistics, reliability assessments, and SEM techniques to examine the relationships among latent constructs. The quantitative analysis provides empirical evidence of patterns, correlations, and causal pathways between the study variables. By integrating these two strands of analysis, the chapter ensures a rigorous and comprehensive examination of the research questions. The subsequent sections first present the results of the qualitative analysis, followed by the quantitative findings, highlighting points of convergence and divergence between the two data sources.

5.1. QUALITATIVE ANALYSIS

The first section of this chapter presents the analysis of qualitative data collected from interviews with 23 ethnic entrepreneurs. Consistent with the methodology, qualitative analysis was employed to capture participants' lived experiences and provide contextualized insights into the study constructs. These findings not only complement the sources used to develop the conceptual model and hypotheses but also integrate with the quantitative results, offering a comprehensive and nuanced understanding of the variables and their interrelationships.

5.1.1. Sample demographics

In this research, interviews were conducted with 23 ethnic entrepreneurs based in the province of Quebec, whose characteristics are summarized in Table 11. All participants met the sample selection criteria, being ethnic entrepreneurs who established a business after immigrating to Canada, each driven by unique motivations. They are investors who have navigated the immigration process, are familiar with its challenges, and are business owners who have created employment for at least one person. Among the participants, eight are female and fifteen are male. All are currently active business owners and recognized experts in their respective fields, providing firsthand knowledge and practical insights into entrepreneurial practices and challenges.

The entrepreneurs represented nine distinct ethnic backgrounds and operated businesses across eleven industries, ensuring diversity in perspectives and experiences. The sample demonstrates a well-distributed range in terms of age and entrepreneurial experience, which spans from 1.5 years to over a decade, with the highest frequency among middle-aged entrepreneurs. The businesses employed between one and ten individuals, with most having five or fewer employees, reflecting the realities of small- and medium-sized enterprises within this population.

The prior work experience of these ethnic entrepreneurs is highly diverse, and in some cases unrelated to their current business activities, which contributes to the depth of insights regarding adaptive strategies and decision-making processes. Overall, the participant group comprises individuals with substantial experience and expertise, making them highly suitable for providing meaningful and contextually rich data. Their perspectives enable a nuanced understanding of how ethnic entrepreneurs make decisions, the factors influencing their business success, and the broader dynamics of entrepreneurship within immigrant communities.

Building on the detailed characteristics and experiences of the participants, the following sections present the key themes and insights that emerged from the interviews, illustrating how ethnic entrepreneurs navigate financial behaviors, decision-making processes, PM² practices, and the factors contributing to business success.

TABLE 11. THE SAMPLE DEMOGRAPHIC CHARACTERISTICS

Source: The researcher

...	Business history	Type of business	Age	Gender	Education	Canadian Experience	Previous job	# of employees
1	2	Bakery	38	Male	College cert.	Yes	Administrative	5
2	5	Grocery store	45	Female	College cert.	Yes	Cashier	3
3	4	Bakery	43	Male	Secondary school	No	Construction	5
4	2	Mobile services	32	Male	University cert.	No	Student	2
5	3	Pastry	44	Male	College diploma	No	pastry maker	6
6	8	Computer serv	50	Male	Bachelor's degree	Yes	Computer Tech	5
7	11	Cabinet maker	51	Male	University cert.	Yes	Construction	3
8	13	Exchange office	54	Female	Bachelor's degree	No	Money changer	5
9	12	Exchange office	52	Male	Bachelor's degree	No	bank clerk	3
10	9	Restaurant	47	Male	College diploma	Yes	Employee	8
11	37	Car services	60	Male	Secondary school	Yes	Mechanic Tech	6
12	7	Catering service	51	Female	College cert.	No	General worker	2
13	15	Education center	48	Female	Master's degree	Yes	Techer	7
14	18	Food bank	63	Female	University cert.	Yes	Immigrant serv	9
15	1.5	Fast food	38	Male	Bachelor's degree	No	Computer Tech	3
16	10	Car services	55	Male	Bachelor's degree	Yes	Mechanic	5
17	16	Taxi services	57	Male	College cert.	No	Employee	2
18	7	Electrician	54	Male	College cert.	Yes	Electrician	3
19	3	Barbershop	37	Female	College cert.	Yes	Beauty Tech	5
20	2	Real estate	42	Male	Bachelor's	No	employee	4
21	15	Dental clinic	55	Female	Professional Doc	yes	Dental assistant	7
22	10	Glossary	57	Male	Bachelor's degree	No	Teacher	10
23	7	Real estate	55	Male	Bachelor's degree	Yes	Computer Tech	2

Note: Cert.= certificate, Serv= service, Tech= technician, Doc= doctor,

5.1.2. Data analysing

Qualitative data analysis was conducted using a systematic content analysis of the interview transcripts. The interviews, conducted online, face-to-face, and by phone¹, were transcribed on the same day to ensure accuracy and minimize data loss. Key evidence, concepts, and significant phrases were carefully identified and highlighted within each transcript. Following this,

1. Out of a total of 23 interviews, four interviews were conducted online using TEAM software, three interviews by phone, and the rest were done face-to-face. Two face-to-face interviews were conducted at the researcher's office and the rest at the ethnic entrepreneurs' workplaces / businesses, according to their request.

preliminary coding was performed, as outlined in Chapter 4, by extracting the highlighted items. Each item was assigned a unique code or number to ensure consistent organization and facilitate subsequent analysis. NVivo 12 software was employed to assist in managing, coding, and analyzing the qualitative data systematically. This approach enabled the identification of recurring themes and patterns across the interviews while maintaining methodological transparency and rigor.

Table 12 provides examples of this process, illustrating how evidence, words, and phrases were systematically identified and coded from the oral narratives of two interviews, numbered 1 and 2. These two interviews are presented as illustrative examples, while the remaining interviews were analyzed using the same rigorous procedures. Building on this rigorous coding and content analysis process, the following sections present the key themes and insights that emerged from the interviews, highlighting how ethnic entrepreneurs navigate financial behaviors, decision-making processes, PM² practices, and the factors contributing to business success.”

TABLE 12. IDENTIFYING KEY EVIDENCE FROM THE NARRATIVES OF INTERVIEWS NO. 1 & 2

Source: The researcher

...	Quotations	Evidence and open code
Interviewee #1, Male, Car services	“I <u>never thought</u> that one day I would become an entrepreneur in Canada. So, I had <u>no prior intention</u>. An opportunity came and I took it”. “I didn't have any written <u>business plan</u> when I started the business, but I <u>loved this job</u> since I was a child.” “After I arrived in Canada, I <u>worked in this field</u> for several years and got to know the <u>techniques and methods of the business</u>. When I got the <u>chance</u>, I did it quickly and <u>didn't think too much</u> about it.” “Well, business is not without <u>risk</u>. I took a risk, but I had <u>nothing to lose</u>. Now that my situation is stable, I take <u>less risk</u> because I'm not looking for <u>trouble</u>.” “Since I had a hard time at the beginning of my entry, I was <u>greedy for success</u>. In the beginning, I <u>didn't have a long horizon</u>, but after a few years, I had <u>big goals</u>”. “I make my <u>decisions based on my experience</u> and I am not familiar with the <u>scientific rules</u> of decision making that you mentioned. I often <u>assume</u> that my decisions are correct because I often make decisions on <u>similar issues</u>. I look at <u>what others are doing</u>”. “I look at my <u>current situation</u> as well as <u>the past of my business</u> to take a risk. These help me to make a more <u>informed decision</u> however, there are many cases where I have <u>regretted my decisions</u>.” “As you see, we do <u>different things</u> here from buying and selling cars to mechanics and service and spare parts. The <u>diversity</u> of work gives us more confidence”.	No goal setting, and have no prior intention (1), incorrect analysis of the market (2), not paying attention to the unusual behavior of the business environment (3), high risk taking (4), having positive image of the business (5), focusing on short-term goals in starting business (6), using available information (7), tendency to place more weight on easily remembered information (8), rule of thumb (9), tend to excessively focus on recent events (10), expecting that everything will be done in the best way (11), making decisions based on the similarity of a particular event to an existing mental prototype (12), having a feeling about the success of the business (13),

Continue Table 12. Identifying key evidence from the narratives of interviews no. 1 & 2

...	Quotations	Evidence and open code
Interviewee #2, Male, Bakery	"I always say to myself, I've <u>worked hard for years</u>, why can't I have a <u>small business for myself</u>? Why can't I create facilities and a good life for myself and my family?" "Having a big house, a modern car, prosperity and quality of life is <u>the least reward I can give myself</u>. If I were to work for someone and get paid, in my country I would have". "My main expertise is in welding, but <u>I didn't want to miss this opportunity</u> when I found a ready-made bakery, even though I <u>didn't have expertise</u> in this field". "For budgeting, I try to <u>have time for payments</u> as much as possible. So, I try to use <u>less cash</u>." "I am a <u>multi-skilled person</u>; I have skills in different fields. I thought I could count on my abilities, but the reality is something else. I wanted to do bookkeeping of my business myself, but I couldn't." "Many of our <u>co-ethnics have businesses</u>. If owning a business was not suitable for immigrants, then <u>why did they enter entrepreneurship</u>?" "I think, many of my co-ethnics have <u>already gone this way</u> and experienced it. <u>Modeling them</u> shortens our way in the business." "I prefer to focus <u>only on the co-ethnic market</u> because my sales are guaranteed. I also prefer to have <u>daily turnover</u>". "My main customers are <u>ethnics</u>, although customers of other ethnicities also come to our store. However, if they are not of the co-ethnicity, my business will be closed."	Delusion of the mind (1), higher subjective value (than real V.) (2), ignoring the effect of small things (3), following the opinion of others (4), imitation of others as herding behavior (5), an imaginary and false belief about the abilities (6), incompatibility of assumptions about starting a business with reality (7), being happy with past experiences (8), overconfidence in own's ability in business (9), the idea of being multi-skilled (10), preferring ethnic market over non-ethnics (11), preferring to have certain daily liquidity than long term investment (12), co-ethnics as particular customers and clients (13), Competition and limitations of general customers

A similar process, including evidence identification and initial coding, was carried out for all interviews. In the next stage, duplicate or repetitive evidence extracted from the interviews was removed, and the main themes were identified through a systematic reclassification. Categories were developed based on the nature of the evidence, common content, and alignment with relevant literature, ensuring that the analysis remained grounded in both empirical data and theoretical frameworks.

Across different interviews, some participants expressed the same underlying concept using different phrases and expressions. For instance, statements such as, "*I have high abilities, why shouldn't I be successful in business?*", "*I have a high education, I can definitely handle business*", "*I thought that the business environment of countries is similar, but there are big differences among them*", and "*Since my father and grandfather were bakers, I thought it shouldn't be so difficult, but what I had already seen and what I'm facing here in reality have many differences*" all conveyed a similar idea. To capture this shared meaning, these expressions were grouped under the common theme of "*illusion of mind*". This approach allowed for the identification of broader conceptual patterns while respecting the nuances of individual participant perspectives. This

method not only facilitated the reduction of overlapping evidence but also enabled the emergence of meaningful and interpretable themes. Accordingly, tables presenting the key themes and categories related to behavioral finance, ethnic entrepreneurship and other relevant topics are provided in the following sections. These tables synthesize the evidence, demonstrating how recurring patterns across interviews support the conceptual understanding developed in the study.

5.1.3. Behavioral finance factors

Table 13 indicates the behavioral finance factors based on the qualitative approach. It includes the main themes, categories, and codes of the behavioral finance along with the frequencies. The results show that the highest frequencies with 55% belong to “excessive optimism”, “anchoring”, “framing” and “herding behavior”. In other words, 55% of the participants in the interviews mentioned the evidence that indicates the codes of this factor. Hence, based on the participants’ opinions’ it can be said that these factors are more influential than others in the ethnic entrepreneurs’ decisions. While the lowest frequencies refer to “neuroticism”, “self control”, “consciousness”, and “openness to experience” with 25% and 30% respectively. According to the interviewees, these factors have the least impact on the decisions of ethnic entrepreneurs. As shown in Figure 12, the frequencies of the other factors are distributed across the spectrum, lying between the minimum and maximum observed values.

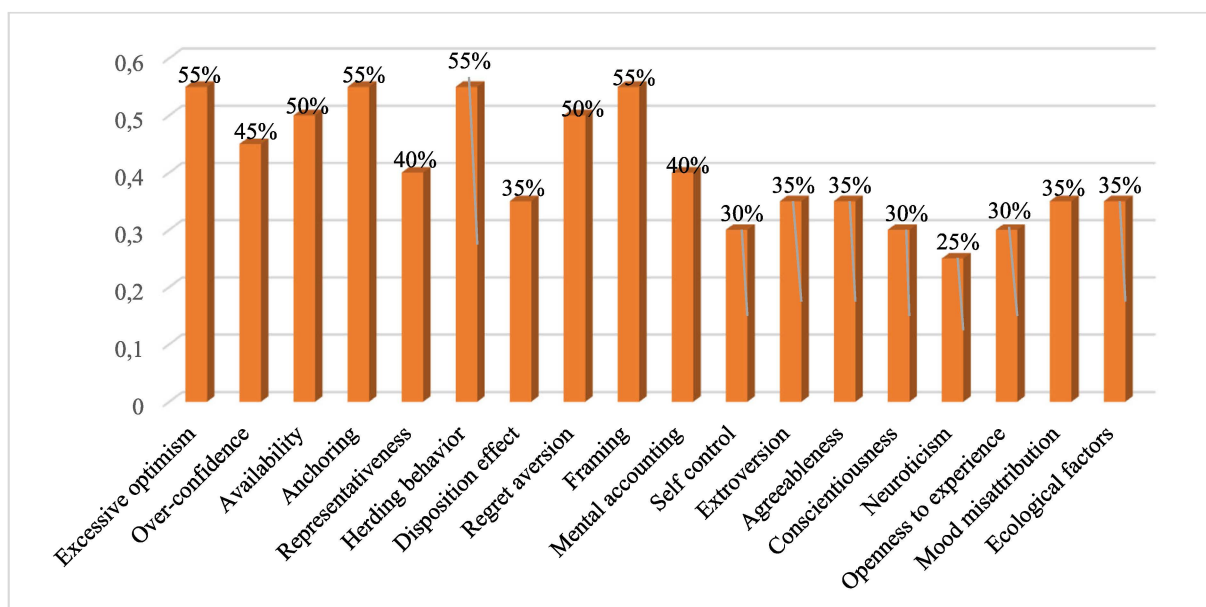


FIGURE 12. FREQUENCIES OF THE FACTORS

Additionally, the factors within each theme were analyzed according to their frequencies. For heuristics, the factors “optimism, anchoring, and herding behavior” show the highest occurrence at 55%, while “dispositional effects” has the lowest frequency at 35%. In the case of perspective theory, “framing and self control” exhibit the highest and lowest frequencies, at 55% and 30%, respectively. Similarly, for personality traits, the analysis reveals that “neuroticism, conscientiousness and openness to experience” represent the most and least frequently observed factors within the theme. This frequency-based analysis provides a clear overview of the relative prominence of each factor across the different thematic areas.

TABLE 13. DATA CODING FOR IDENTIFYING FACTORS INFLUENCING THE EES' DECISION MAKING

Theme	Category	Open code	Evidence	N	%
Heuristics	Excessive optimism	Pretend that everything is fine	The new environment is free of unforeseen events, having a feeling about the success of the business before starting, expecting that everything will be done in the best way, optimistic assumptions, feeling that there will not be much challenge in business, underestimating the speed and duration of doing things, not feeling too risk-averse before starting work, incompatibility of the entrepreneur's assumptions about starting a business with reality, having the idea of being free from error and mistake, being happy with past experiences and unrelated skills, having different presuppositions before and after decision making, not believing in business failure, exceeding normal results, etc.	11	55%
		Unnecessary feeling of success			
		Illusion of business without challenge			
		Not feeling risk-averse			
		Escape from harsh realities			
	Over-confidence	Over-estimation	Overconfidence in own's ability, misconception of having special skills and experience for entrepreneurship, pretend to have full knowledge in business, the idea of being multi-skilled, false hopes of short-term business success, misconceptions about the accuracy of business decisions, thinking hard and for a long time about business that gives investor little satisfaction, thinking that they are much better than they actually are, overestimating understanding of financial markets and specific investments, disregarding data and expert advice about the business, tendency to taking high risk, little caution in decisions, living in the illusion of some possessions, better-than-average, feeling special, etc.	9	45%
		Over-placement			
		Over-precision			
		Imagining of a multi-skilled person			
		Imagining the accuracy of decisions			
	Availability	Preferring ethnic market	Reaction to recent news, blaming external factors, preferring ethnic market over non-ethnics, using new and available information to overcome business environment, preferring to invest in a business that is approved by ethnicities, thinking that co-ethnics, friends & acquaintances are the main sources of information, always use social networks especially ethnic ones, tendency to place more weight on easily remembered and readily accessible information, tend to excessively focus on recent or vivid events, becoming cautious in using past information, incorrect and biased judgments and conclusions and so on.	12	50%
		Biased judgments			
		Ease of recalling memories & experience			
		Biased conclusion			
		Using social networks- ethnic networks			
	Anchoring	The effect of the first option	focusing on new information about small businesses, entering the business with a new mindset, predicting the future of business based on its current state, thinking to being our own boss, considered recent important events before starting the business, preferring to invest in business which recommended by a friend, relying on investment decision to favourable positive information related to the business, easily convincing about someone's words about crisis that is coming, tendency to rely too heavily on the first piece of information receive, having special faith in certain people as references, being affected by visible information and apparently luxurious life of some co-ethnics, tendency to not seeing new data about the reality of life and business, paying little attention to the existing reality about business, believing in rumours, gullibility and so on.	11	55%
		Believing in reference people			
		External data significance			
		Influenced by rumours			
		Wrong and biased estimates			
	Represent- ativeness	Relies on preexisting stereotypes	Investing in an unfamiliar business, focus on products/services that are only basic needs of co-ethnics, influencing the quality of life of some co-ethnics on the decision-making, making mistakes without realizing it, making decisions based on the similarity of a particular event to an existing mental prototype, giving more weight to significant information about an event and associating that information with its success or failure, much trust in stereotypes, recognizing a small sample as a representativeness of whole population, looking at the status of a small sample of co-ethnics and generalizes it to all, limited insight, having no clear vision and mission, modeling certain people, etc.	8	40%
		Effects of preconceived outcomes			
		Rely on categories			
		Quick resulting			
		Incorrect generalization of results			
	Herding behavior	Fear of missing out	Getting advice from friends and some co-ethnics while investing, checking opinions on social networks at the time of decision, follow news related to business in the media, relatives and inter-ethnic groups, the assumption that whatever ethnic business owners have done in business has been true, asking other persons' opinions when making a final decision, highly influenced by the opinions and actions of others, membership in social networks and following the comments, blindly following the others' opinions, tendency to think and act like others, hearing from elders, relaxing with the presence of others in business,	13	60%
		Adapting the mind to the majority			
		Copying the others			
		Willingness to seek a leader			
		Willingness to accompany others			

Continue Table 13. Data coding for identifying factors influencing the EEs' decision making

Theme	Category	Open code	Evidence	N	%
(Continue) Heuristics	Disposition effect	Tendency to prematurely sell assets	Hated of loss, satisfied with profit, the greater negative effect of losses than the positive effect of gains, a willingness to make choices that can lead to potential gains, guaranteed profit preference, regret aversion, the desire to value more the goods that businessman owns, emotional attachment to investment, cognitive dissonance, loss aversion, existence of conflict and inconsistency between the investor's belief and reality, unexpected choices in the face of certainty and losses versus certainty and gains, low diversification of investments, reluctance to take high risks, loss aversion,	7	35%
		unexpected choices in the face of certainty			
		Maintenance of loss assets			
		Cognitive dissonance			
Perspective theory	Regret aversion	Low diversity in the portfolio	Waiting for situation change, feeling regret from wrong investments, getting upset after making mistakes, fear of eliminating business, avoiding a bad decision, irrational behaviors and actions in regret process, making decisions based on past behavior, hasty decisions to sell the business, changing the use and ownership of business, holding assets for a better price, discomfort with long-term holding of loss-making assets, being upset with the delay in responding to the customer which causes a loss, getting upset for not waiting after ensuring the income, excessive caution to avoid loss, Avoiding new evidence and anything that hinders decision making	10	50%
		Loyalty to losing positions			
		Admitting mistakes			
		Hasting in trades			
		Looking for positive evidence			
	Framing	Avoiding drastic measures	Focusing on friends, co-ethnics, and social networks as primary sources of info, inability to deeply process entrepreneurial information in a short time, relying on whatever information is readily available to make decisions, having a profitable image of the business, trying to be convinced of profit and loss in business, being worried and cautious when starting entrepreneurship, thinking about portfolios that have a high probability of success, using limited criteria for decision making instead of complex evaluations, tendency to choose options that are associated with winning, reducing performance evaluation to a single criterion, superficiality, etc.	11	55%
		Different reactions to the same info.			
		Focusing on only a few aspects in decision making			
		Decision based on information sharing format			
	Mental accounting	Not paying attention to visions in wealth creation	Different behavior with earned money, focusing solely on hiring co-ethnics, considering the opportunities provided only by co-ethnics, effects of his emotions in the decision-making process, make financial decisions based on emotionally charged considerations rather than on rational ones, tend to quit work after reaching a certain level of income during the day, sticking to a predefined budget, economizing on other expenses after a large expenditure, different value of money with different origins, impact of the source of income on how it is allocated among different business activities, fungibility of money and assets, Willingness to keep personal assets, etc.	8	40%
		Corporate branding effects			
		Specific mental orientations			
		Losing the macro view of investments			
	Self-control	Lack of financial flexibility	Poor self-control and poor decision-making, tendency to postpone activities, instant gratification versus long-term rewards, prioritizing short-term needs over long-term goals, following short-term approaches to overcome post-immigration problems, not considering future goals, resorting to risky assets to make money, desire for quick business turnover, giving importance to the evidence that supports their beliefs, looking for reasons to justify the actions in business, having a small portfolio size, investing a smaller portion of the income, tendency to take risks, ignoring investment offers, lack of long-term vision, regret for missing opportunities,	6	30%
		Saving money for emergencies (instead of investing)			
		Tendency to wasteful spending in business			
		Deficiency in the perception of profit and loss			
		The desire for short-term profits			
Personality traits	Extroversion	Ignoring investment offers	Fast and quick decisions, easy/hard decisions, focusing on the present rather than following rules and regulations, low internal control, low intellectual ability, weak efforts, making investment decisions under the influence of external variables, rely on external judgments and evaluation, postpone important decisions, analyzing every aspect of a situation in detail, relying on people to make decisions, focusing on quality rather than quality, planning for limited options by focusing on quality, relying on intuition, instincts, inner feelings and reactions, having better performance in hard situation, continuing the work until the end, apathy, low tolerance, etc.	7	35%
		Lack of investment plans			
		Inability to see the long-term effects of current actions			
		Investing before thinking fundamentally			
		Highly influenced by other persons' ideas and thoughts			
		Making quick decisions and leaving projects unfinished			
		Superficial and non-deep analysis			
		High risk taking			

Continue Table 13. Data coding for identifying factors influencing the EEs' decision making

Theme	Category	Open code	Evidence	N	%
(Continue) Personality traits	Agreeableness	Desire to compete rather than cooperating	Small distance between similar businesses, the impact of low agreement on decision making, tendency to moderate risky decision making, putting self-interest above getting along with others, tend to view others as selfish so that they only think their own interests, using heuristics more than others, ability to regulate the behavior properly, cooperating with others in decision-making, lower levels of impulsivity, humble and considerable, understanding the feelings of others in business, no willingness to compete, get along well with others, not judging others, having good relations with competitors, clients & employees, being a supporter, needing others' approval in business, refrain from being contradictory, effective collaboration, profit oriented in business, searching before decision making.	7	35%
		Trusting the opinions and ideas of others			
		Insufficient attention to competitors			
		Poor partnership			
	Conscientiousness	less effective decision-makers under pressure	Self-starters, following the advice of experts, able to delay immediate gratification, no tendency to be constrained by the rules and regulations, paying attention to detail and prioritizing precision in planning, having no tendency to establish a business that violates human rights, harms the environment, or endangers human life, mistakes in analysing the business, willingness to hire co-ethnics, doing business that he is not aware of, investing on that give self-satisfaction, making prudent financial decisions, following stereotypes, influencing the results by external factors, ability to focus on oneself, thoughts, and feelings align with internal standards, etc.	11	30%
		Taking business easy			
		Inability to motivate oneself			
		Impulsive decision making			
	Neuroticism	Requiring support or guidance from others	Have no emotional intelligence, sensitivity to environmental stressors, finding situations threatening, more disappointment than others, mood fluctuations, focusing more on the negative aspects of business, decisions based on the self-interest, tendency to low risk, investigating possible problems of business, more tendency to use services of immigrants' associations and small business centres, worrying about finishing projects on time, inability to control stress and discomfort, tendency to interpret neutral situations as threatening situations, willing to see minor problems & magnify them, difficulty controlling emotions in the moment, sensitivity,	5	25%
		Not prone to extensive planning			
		Chronic concern about business results			
		Tendency to interpret neutral situations as threats			
	Openness to experience	Dysfunctional stress	Tendency to seek out new experiences, willing to explore ideas, accepting business challenges, values, emotions, and sensations that differ from previous experience, be receptive to new and unconventional ideas, ability to adapt thought and behavior to better fit with changing situations, high sense of curiosity, tendency to find new ideas, gain new experiences and explore imagination, accepting high risk, quick adaptability with new environment, navigating uncertain and complex situations more easily, willingness to experiment new things, considering inner feelings, committed to implementing programs, more aware the feelings, tendency to think and act in individualistic ways, curiosity and strong imaginations,	9	30%
		Attachment to previous situations			
		Trying to come back after hardships			
		Being closed to new experiences			
Felling & emotions	Mood misattribution	Preference for routines and traditions in business	Making optimistic judgements, making different decisions in business, sensitivity to weather, being sensitive to work situations, effects of feeling on decisions, influencing some environmental factors on unrelated decisions, more sensitivity to strain, more strain-avoidant than others, feeling risk, changing the spirit of the entrepreneur depending on the business situation, difficulty in concentration, fast movement or speech, restlessness and confusion, doing high-risk behaviors, abnormal increasing in the amount of activities, trying to do several activities at the same time,	10	35%
		Adapting to the new business environment			
		Getting little information about the business environment			
		Not easily accepting changes			
	Ecological factors	Effects of weather on decisions	Contributing to environmental sustainability, respect for environmental laws, respect to human and employees' rights, sensitivity to complying with the environmental protocols of the host country, measures to reduce energy, equal rights for all, not forcing employees to work long hours, prioritizing ecological and environmental factors based on the social needs of the host country, considering to meet the needs of society and ethnic groups, contributing to preserve the environment and its sustainability, weather,	13	35%
		Environmental factors			
		Doing high-risk behaviors			
		Irritability to the environment changes			
		Carrying out several risky projects at the same time			
		Respecting the rules & regulations			
	Ecological factors	Respecting of human and employees' rights	Contributing to environmental sustainability, respect for environmental laws, respect to human and employees' rights, sensitivity to complying with the environmental protocols of the host country, measures to reduce energy, equal rights for all, not forcing employees to work long hours, prioritizing ecological and environmental factors based on the social needs of the host country, considering to meet the needs of society and ethnic groups, contributing to preserve the environment and its sustainability, weather,	13	35%
		Considering social needs			
		Co-ethnics' needs			
		Environment sustainability			

To provide a comprehensive overview of the decision-making processes of ethnic entrepreneurs, the qualitative findings were systematically organized and analyzed. According to Table 13, a total of 218 open codes were identified from the interview data. These codes were grouped into 18 categories, which were further consolidated under four overarching themes: “heuristics behavior”, “prospects theory”, “personalities traits”, and “feeling and emotions”. The themes were named based on the coherence of their constituent codes and categories, and were informed by the behavioral finance literature, ensuring both theoretical relevance and empirical grounding. This thematic organization allows for a structured understanding of the factors influencing ethnic entrepreneurs’ decisions, highlighting patterns, similarities, and variations across participants. In summary, these factors and their interrelationships can be represented visually in the form of a conceptual model (Figure 13), providing a clear framework for interpreting the qualitative findings and linking them to the broader research objectives.

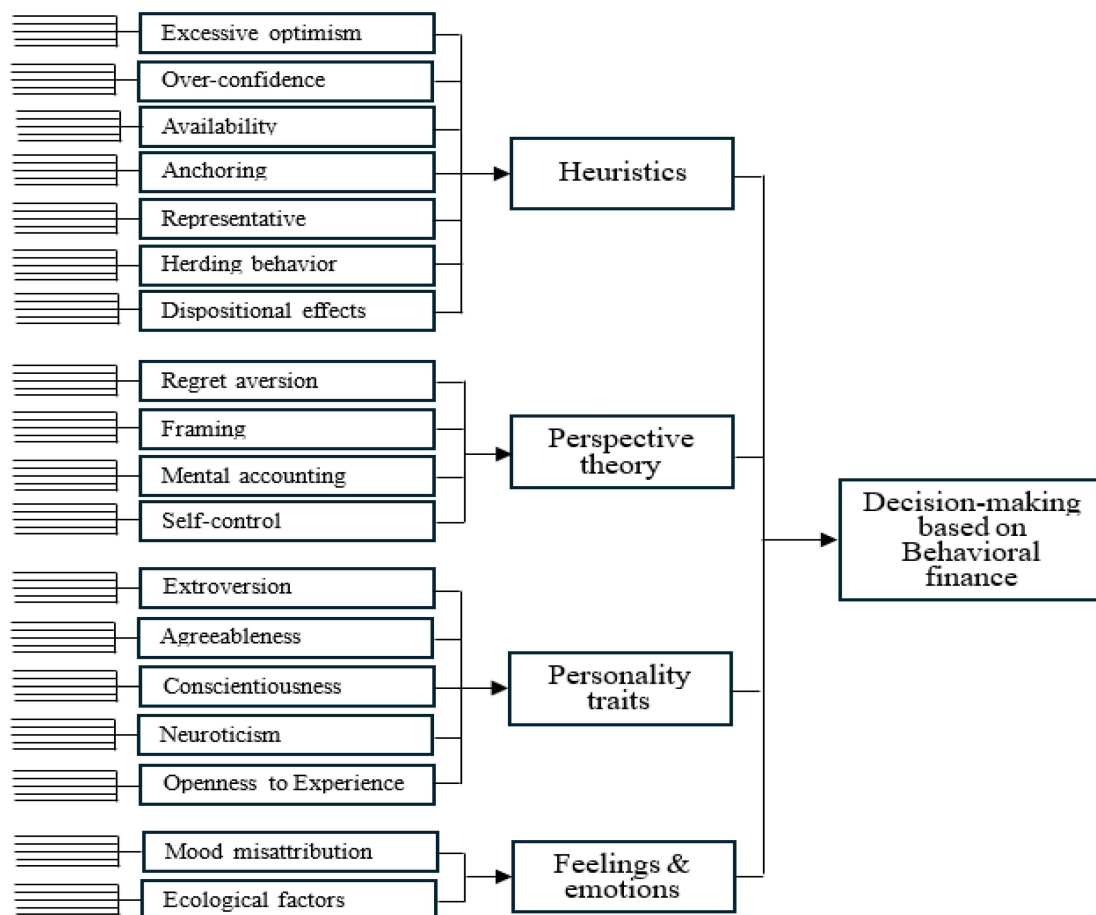


FIGURE 13. FACTORS, CATEGORIES, AND CONCEPT BASED ON THE QUALITATIVE STUDY

Considering the frequency of the identified factors provided a solid and systematic basis for determining their relative importance. Factors that were most frequently mentioned in the interviews naturally reflect the most salient and influential elements in ethnic entrepreneurs' decisions. Accordingly, those factors with the highest frequencies were selected, prioritized, and incorporated into the proposed conceptual model. This approach ensures that the model not only captures the most prominent patterns emerging from the qualitative data but also represents the collective perspectives and experiences of the participants, thereby enhancing both the validity and practical relevance of the framework. The following is a detailed analysis of each factor.

5.1.3.1. Heuristics behavior

The analysis of the qualitative data indicates that heuristics is a recurring factor influencing the decision-making processes of ethnic entrepreneurs. Across multiple interviews, participants reported relying on mental shortcuts to expedite business and investment decisions. These shortcuts included tendencies such as optimism, overconfidence, availability, anchoring, and representativeness. The data reveal that participants frequently made decisions based on their feelings or immediate impressions rather than relying solely on concrete information. The use of heuristics was particularly prominent when entrepreneurs faced contextual constraints, including difficulty finding suitable employment, language barriers, and pressing financial needs. In these situations, quick decisions were often employed to reduce cognitive load and address immediate challenges. Evidence from the interviews shows that such heuristic-driven decisions occurred repeatedly and were a common strategy among participants in navigating complex and uncertain business environments. The findings suggest that reliance on heuristics can lead to systematic errors in judgment, with participants occasionally making inaccurate predictions or suboptimal choices under conditions of uncertainty.

1. Excessive optimism - The analysis of the interview data indicates that excessive optimism is a recurring and prominent factor in the decision-making of ethnic entrepreneurs. Many participants highlighted their abilities and past experiences, often emphasizing skills that were not directly related to their current business operations. For example, one participant running a service business described himself as a professional in welding, cooking, and construction, fields entirely unrelated to his current enterprise. Several other participants similarly expressed that they were multi-skilled, highly capable, talented, and less prone to error than others. The transcripts reveal

that this optimism often shaped their approach to planning and execution, with entrepreneurs underestimating the time, complexity, and resources required to complete certain tasks or projects. Some participants also mentioned taking on multiple tasks simultaneously, reflecting their confidence in handling diverse responsibilities despite limited relevance to the business context. Across interviews, this pattern was repeatedly observed, suggesting that excessive optimism is a common cognitive tendency among ethnic entrepreneurs. The data show that this optimism not only influenced decision-making speed and risk perception but also affected resource allocation, prioritization, and expectations regarding business outcomes. By consistently highlighting their capabilities and underestimating challenges, participants demonstrated a behavioral pattern that, while promoting confidence, could also lead to miscalculations and overestimation of their capacity to manage tasks effectively.

2. *Overconfidence* – The analysis of the interview data indicates that overconfidence is a frequently observed factor influencing ethnic entrepreneurs' decision-making. Several participants reported a strong belief in their own skills, knowledge, and judgment when making business and investment choices. Under the influence of this bias, some immigrant investors expressed sentiments such as, "*Why can't I succeed like everyone else in the host country?*" Others interpreted their acceptance into the immigration process among thousands of applicants as evidence of their exceptional abilities. The data suggest that this overconfidence sometimes led participants to overestimate their capabilities, relying heavily on personal assessments while overlooking external information or alternative perspectives. Participants consistently demonstrated certainty in their predictions and decisions, even in situations characterized by uncertainty or limited information. Overconfidence appeared particularly pronounced among entrepreneurs with higher levels of prior education or previous entrepreneurial experience. This factor was repeatedly mentioned across interviews and was often associated with a willingness to take risks quickly and make decisions independently, with minimal consultation or external validation.

3. *Availability*- The analysis of the interview data indicates that the availability heuristic appeared in some participants' decision-making processes, but its influence was limited compared to other behavioral biases such as optimism and overconfidence. A number of participants mentioned considering recent events, observed successes, or examples from their professional networks when evaluating business opportunities, although this occurred inconsistently across

interviews. For example, one participant stated, *“I sometimes notice what others are doing, but I always try to double-check before making any decisions,”* and another noted, *“I have seen people succeed in a particular business, but I don’t automatically think it will work for me—I need more than just what’s in front of me.”*

Out of the 23 interviews, only a minority of participants explicitly referred to readily available information when making business decisions. Among those who did, references were often isolated or incidental, rather than forming a consistent decision-making pattern. For instance, some participants mentioned recalling recent successes within their ethnic or professional networks when considering potential opportunities, but they did not systematically apply this information to guide their choices. In addition, the types of information that participants drew upon varied widely. Some referenced personal observations of other businesses, while others recalled stories shared by colleagues or family members. Despite these mentions, there was no consistent evidence linking availability-based considerations to specific outcomes or strategies. The distribution of references across participants suggests that availability is neither a central nor frequently utilized heuristic among the ethnic entrepreneurs in this sample.

Finally, the coding of interview data shows that while availability was noted, its frequency was relatively low compared to other heuristics. This pattern indicates that, although ethnic entrepreneurs occasionally use readily accessible information in their decision-making, it does not constitute a dominant influence on their investment or business choices. Illustrative quotes from the interviews, such as those cited above, were representative of the few instances where availability was mentioned, confirming its limited but observable presence in the data.

4. Anchoring – Data analysis indicates that anchoring plays a notable role in shaping the decision-making processes of ethnic entrepreneurs. Several participants described situations where their judgments and expectations were strongly influenced by initial reference points, such as prior experiences, assumptions brought from their home countries, or the first pieces of information they encountered in the host country. For example, some entrepreneurs reported entering the Canadian market with the belief that *“the business environment here must be similar to what I experienced back home,”* only to later recognize substantial differences in consumer behavior, regulations, and competitive dynamics. These early anchors led them to underestimate the adjustments required to operate successfully in a new context. This bias was particularly visible in financial transactions,

such as buying or selling a house, transferring a ready-made business, or purchasing expensive equipment and machinery.

Anchoring was also evident in financial decisions. Participants explained that when estimating costs, revenues, or timeframes, they often relied on initial numbers or early impressions, even when new evidence suggested otherwise. One respondent shared, *“Since my father and grandfather were bakers, I thought it shouldn’t be so difficult, but what I had already seen and what I’m facing here in reality have many differences.”* Another participant reflected, *“At first, I calculated expenses based on what I knew from my country, but here, everything from rent to wages is on another level. It took me a long time to adjust my expectations.”* These quotes illustrate how cultural and family-based anchors shaped expectations, sometimes resulting in misaligned strategies.

The evidence shows that while anchoring helped participants feel more confident in unfamiliar environments, it often restricted their flexibility to fully adapt to the host country’s business context. Many respondents acknowledged that sticking too closely to their initial assumptions led to costly errors, delays, or missed opportunities. Thus, anchoring emerged as a cognitive shortcut that influenced ethnic entrepreneurs’ ability to interpret new information objectively and make context-appropriate decisions.

5. Representativeness – The analysis of interview data indicates that representativeness is another cognitive bias that influences the decision-making of ethnic entrepreneurs. Under this bias, participants tended to rely on simplified mental shortcuts, using familiar patterns or prior experiences to assess new opportunities. Instead of carefully examining the unique conditions of the host country, they often judged situations based on similarities with what they had observed in their home countries or from other entrepreneurs in their community. For instance, one respondent admitted, *“I thought if someone from my country could make money with a restaurant, then I can do the same here. I didn’t think about how different the rules and customer expectations are.”* Another explained, *“Back home, people always wanted this type of product, so I assumed the same demand would exist here. I didn’t check enough before starting.”* These examples illustrate how entrepreneurs generalized from limited or irrelevant past experiences, assuming patterns would hold true in a new and very different context.

The representativeness bias also appeared when entrepreneurs compared themselves to successful co-ethnics. Several participants believed that because others from their community had succeeded in certain businesses, their own ventures would naturally follow the same path. While this provided motivation and confidence, it often caused entrepreneurs to overlook structural differences such as competition, consumer behavior, or regulatory requirements. As one participant noted, *“I saw many from my community doing well in small shops, so I was sure I could succeed too. Later I realized location and timing matter much more than I thought.”*

Overall, the data suggest that representativeness shaped decision-making by encouraging entrepreneurs to draw on superficial similarities and familiar examples rather than engaging in detailed market analysis. While this sometimes-reduced uncertainty and gave them confidence to act, it frequently resulted in misjudgments about demand, competition, and feasibility, leading to costly errors or unmet expectations. In this sense, representativeness offered entrepreneurs a sense of direction in the face of uncertainty, but the reliance on perceived patterns rather than systematic evaluation often undermined long-term success. Thus, although it provides short-term reassurance, its overall effect is to increase the likelihood of flawed strategies and disappointing outcomes.

5.1.3.2. Prospect theory

The analysis of interview data highlights the relevance of prospect theory in shaping the investment and business decisions of ethnic entrepreneurs. Prospect theory, which emphasizes how individuals evaluate potential gains and losses relative to a reference point rather than in absolute terms, appeared in different forms throughout the interviews. Entrepreneurs often expressed that their decisions were guided not only by the pursuit of profit but also by the fear of loss, uncertainty, and the risks inherent in their immigrant status. This dual orientation was reflected in how they weighed opportunities—sometimes taking risks to avoid failure or recover previous losses, while in other situations acting cautiously to protect what they had already achieved.

A recurring theme across participants' accounts was the emotional intensity with which potential losses were considered. Several respondents admitted that the possibility of losing their limited resources felt more pressing than the chance of earning additional profit. This attitude shaped not only their investment choices but also broader strategic decisions, such as whether to expand their businesses, form partnerships, or diversify into new markets. As one participant put it, *“I cannot afford to lose what I have built here, even if it means growing more slowly.”* Such

expressions demonstrate how loss aversion and related behaviors directly influenced entrepreneurial thinking. At the same time, the analysis indicates that entrepreneurs did not respond uniformly to risk. Some participants displayed a willingness to take significant risks when facing difficult circumstances, such as financial hardship or the failure of previous ventures. For these individuals, high-risk decisions were interpreted as a necessary means of avoiding worse outcomes. Others, however, became increasingly conservative once they had achieved a certain level of stability, preferring to protect existing assets rather than pursue uncertain opportunities. This variability underscores the role of reference points—whether tied to past investments, migration experiences, or personal achievements—in shaping the way risks and rewards were framed and evaluated.

Overall, the findings suggest that prospect theory provides an effective lens for understanding the behavior of ethnic entrepreneurs, as it captures the interplay between aspirations for growth and fears of loss in contexts marked by uncertainty and vulnerability. Specifically, the interviews revealed four distinct patterns, regret aversion, loss aversion, mental accounting, and framing, each of which influenced the way participants evaluated risks and made decisions.

1. Regret and loss aversions- The interview data highlight that loss aversion and regret aversion are among the most influential behavioral factors shaping the decisions of ethnic entrepreneurs. These two biases, although distinct, were often intertwined in practice, creating a strong tendency toward caution, risk avoidance, and incremental strategies.

Loss aversion emerged repeatedly in participants' narratives. Entrepreneurs frequently described how the possibility of losing financial capital, time, and credibility weighed more heavily in their decisions than the potential for equivalent or even larger gains. Many respondents emphasized that, given their struggles in raising start-up funds, they could not afford to "waste" resources on uncertain ventures. One entrepreneur stated, *"I cannot take risks like others; if I lose what I have saved, there is no second chance for me."* Another explained, *"When you have worked so hard to save a little and put it into business, the thought of losing it is terrifying. Gains don't excite me as much as losses scare me."* These accounts illustrate how loss aversion directed decision-making toward safer, more conservative options, even when higher potential profits were available.

At the same time, regret aversion added an emotional and psychological dimension that further reinforced this cautious approach. Participants often described how the anticipation of self-blame or disappointment shaped their choices. Many feared that making the “wrong” decision would not only bring financial consequences but also lead to lasting personal regret. One respondent explained, *“If my business fails, I will never forgive myself, because I had other options, and I chose wrong.”* Another added, *“It’s not just about losing money. It’s about always thinking afterward, I should have done differently.”* This illustrates how regret aversion amplified the emotional burden of decision-making, leading entrepreneurs to prioritize choices that minimized the possibility of future remorse, even if they limited growth opportunities.

Although closely related, the two biases showed unique characteristics. Loss aversion was primarily financial in nature — entrepreneurs avoided loans, delayed expansion, or withdrew from competitive markets to prevent monetary setbacks. Regret aversion, in contrast, was more social and psychological, tied to identity and community expectations. Several participants stressed that failure would not only affect their self-esteem but also bring shame or criticism from family members and ethnic networks. In this way, regret aversion magnified the perceived consequences of poor decisions, extending them beyond individual losses to collective judgment.

Taken together, loss aversion and regret aversion explain why many ethnic entrepreneurs favored low-risk, incremental growth strategies rather than bold, innovative moves. Even when they recognized opportunities with substantial potential rewards, the combined weight of fearing losses and anticipating regret often constrained their willingness to act. This dual influence thus represents one of the most consistent and powerful patterns observed in the qualitative data, shaping entrepreneurial trajectories in ways that both protect against failure and, at times, limit success.

2. Framing- The data analysis highlights the importance of framing effects in shaping the decision-making processes of ethnic entrepreneurs. Framing refers to the tendency of individuals to make different choices depending on how information, risks, or outcomes are presented. Many participants acknowledged that they perceived opportunities and risks differently depending on whether situations were presented in terms of potential gains or potential losses. This bias often influenced how they evaluated investment decisions, business expansion, or even day-to-day operational risks. For example, one entrepreneur noted, *“When I was told that starting a franchise*

means I could increase my monthly income by at least 30%, I was excited. But when another option was explained as risking a 20% decrease in income, I refused to even consider it.” Such statements illustrate how entrepreneurs may respond more positively to gain-framed messages than to loss-framed ones, even when the outcomes are objectively similar. Another participant similarly explained, *“If someone tells me there is a chance of making a profit, I feel motivated, but if they start with what I might lose, I immediately think it is too risky.”*

The findings suggest that framing strongly affects the way ethnic entrepreneurs perceive risk and opportunity in the host country’s market. In some cases, positive framing encouraged overly optimistic expectations and quick commitments to projects without sufficient risk assessment. Conversely, negative framing often discouraged participants from pursuing potentially viable opportunities, leading to missed chances for growth and diversification.

Overall, the framing effect played a dual role: on one hand, it provided motivation and confidence when opportunities were presented positively; on the other hand, it limited rational evaluation by making participants overly sensitive to how information was communicated rather than its substantive content. This highlights the vulnerability of ethnic entrepreneurs to decision-making biases rooted in cognitive perceptions of gains and losses, which can ultimately shape their entrepreneurial outcomes.

3. Mental accounting- Ethnic entrepreneurs in this study frequently demonstrated behaviors consistent with mental accounting, which influenced their financial decision-making. Mental accounting refers to the tendency of individuals to categorize, separate, and treat money differently depending on its source, intended use, or psychological labeling, even when rational economic theory suggests that all money should be treated equivalently.

Many participants described how they separated their finances into distinct “mental accounts,” often keeping personal, family, and business expenses rigidly apart. For example, one respondent explained, *“I never touch the money I put aside for my children’s education, even if my business is in trouble. That money is not for business.”* Another participant emphasized a similar behavior: *“I see my business income as completely different from the money I brought from my country. I don’t mix them, even if the business is not going well.”*

The data also reveal that entrepreneurs’ temporal moods and emotional states affected how they approached financial decisions and resource allocation. One participant noted, *“I often have*

a good mood in the evenings. Therefore, I try not to have my important appointments in the morning and often make my decisions in the evenings.” Another explained, *“I feel very bad in the fall, and I am often depressed. I have this bad feeling until the end of March. So, I try to make more efforts in the months when I am in a good mood to compensate for the shortcomings of the previous months.”* These statements suggest that mental accounting is not only influenced by financial categorization but also by personal rhythms, mood states, and perceptions of when it is optimal to act.

In addition, some entrepreneurs framed money received from different sources in distinct ways. For instance, remittances, loans from relatives, or immigration settlement funds were frequently considered “special” money that should not be risked, while daily business revenues were seen as money that could be spent more freely. As one interviewee put it, *“I think of the government grant differently than my own savings. I don’t take big risks with it because I feel responsible, but with daily income, I am ready to take more chances.”* While mental accounting sometimes helped entrepreneurs enforce financial discipline and avoid unnecessary personal spending, it also led to inefficiencies in financial management. Entrepreneurs might resist reallocating money across accounts even when doing so could stabilize or grow their businesses. This compartmentalized approach occasionally resulted in missed opportunities for investment, overreliance on external borrowing, or heightened financial stress during downturns.

In summary, the evidence indicates that mental accounting shaped ethnic entrepreneurs’ financial behavior by reinforcing psychological distinctions between different types of money and by being influenced by temporal moods and emotional states. While this bias provided structure and discipline in financial management, it also limited flexibility and sometimes led to suboptimal decisions in contexts that required adaptability and efficient use of resources.

5.1.3.3. Market conditions

In exploring the role of market conditions, this study considered whether the dynamics of ethnic and local business environments shaped the decisions and outcomes of ethnic entrepreneurs. While traditional behavioral finance research highlights the significant impact of broader financial market conditions on investor behavior, the results of this study show a different picture in the entrepreneurial context. Specifically, the findings do not confirm a significant relationship between

ethnic market conditions and the decision-making processes or project success of ethnic entrepreneurs.

This distinction arises from the fact that “market conditions” for ethnic entrepreneurs are fundamentally different from those in financial markets. Instead of dealing with large-scale financial fluctuations, stock prices, or macroeconomic indicators, ethnic entrepreneurs operate within localized ethnic and community-based markets. The interview data suggest that while participants were aware of these conditions, they did not rely heavily on them when making decisions. For many, personal factors such as financial constraints, adaptability, and family or community responsibilities were more decisive. As one entrepreneur explained, *“The ethnic market is always changing, but what really matters is what I can do with my own resources.”* Another noted, *“Competitors come and go, but if I have my family working with me, I can manage to survive.”*

Overall, the evidence indicates that ethnic entrepreneurs are less influenced by external market conditions than by internal capacities and social networks. This finding underscores the importance of distinguishing between financial market dynamics commonly examined in behavioral finance and the unique, localized context of ethnic entrepreneurship. While financial markets can exert strong pressures on investors, ethnic entrepreneurs often navigate their environments by emphasizing individual resourcefulness and community support, rather than by responding directly to market fluctuations.

1. Herding behavior- The analysis of interview data indicates that herding behavior—commonly defined as imitating the decisions of others—was not a dominant factor in shaping the decisions of ethnic entrepreneurs in this study. While herding is often central in financial markets, the findings here suggest that these entrepreneurs are more inclined to rely on their own judgment, skills, and resources, rather than following collective trends. Interestingly, 46% of participants acknowledged that they considered the opinions of co-ethnics, friends, and relatives when starting or managing their businesses. However, they stressed that such advice functioned primarily as a source of information or reassurance, not as a directive. As one participant explained, *“I listen to what my friends and relatives say, but in the end, the decision is mine.”* Another added, *“I pay attention to what other business owners in my community do, but I cannot base my decisions on*

them, because our situations are different.” These responses suggest that while community and family input is valued, it does not necessarily translate into imitative behavior.

The role of family was particularly emphasized as a trusted source of guidance. Several entrepreneurs highlighted that spouses or close relatives had meaningful influence on their decisions, even if they did not dictate the outcomes. As one respondent put it, *“My family’s opinion matters, they are the ones I trust the most. But I know the final responsibility is mine.”* At the same time, a few participants noted that some newcomers, especially in their initial phase of adaptation, tend to follow the path of others from the same ethnic group. For instance, one entrepreneur remarked, *“When you are new and don’t know the environment, sometimes you follow others just to survive, but later you realize you need your own way.”* This indicates that imitation may occur in the early stages, but it is often a temporary strategy rather than a long-term behavioral pattern.

Overall, the findings show that while ethnic entrepreneurs do engage with their communities and families as important sources of information and support, they generally avoid full reliance on herding. Instead, decision-making is framed around personal evaluation, individual resources, and contextual factors.

2. Market information - The analysis of interview data shows that market information plays a complex but somewhat limited role in the decision-making processes of ethnic entrepreneurs. Unlike financial markets—where information is standardized, categorized, and updated in real time—ethnic markets often operate under conditions of imperfect or fragmented information. Several participants emphasized the difficulty of accessing reliable, structured, and timely data about customer preferences, regulations, or market opportunities. As one entrepreneur explained, *“In business, we do not have databases like in the stock market. We learn from our own mistakes, not from reports.”* This lack of comprehensive information often forces ethnic entrepreneurs to rely on informal channels such as word of mouth, co-ethnic networks, or personal observations. These sources provide some guidance but are typically anecdotal, context-specific, and prone to biases. For example, one participant said, *“I often ask friends in my community about suppliers or customers, but the information is not always complete or reliable.”* Another added, *“In our businesses, we cannot get the same kind of clear market statistics that larger companies have. We work with what we can see and hear.”*

Despite these limitations, some entrepreneurs have adapted by combining small fragments of available information with their own experience and intuition. This hybrid approach allows them to mitigate uncertainty, though it remains less systematic than in highly institutionalized markets. A respondent reflected, *“I trust my instincts and what I see daily in my shop more than any report. Reports don’t exist for small markets like ours.”* The reliance on incomplete and informal information often slows down decision-making and increases exposure to risks, as entrepreneurs may misjudge demand, overlook competition, or fail to anticipate regulatory changes. At the same time, this environment fosters resilience and creativity, as many ethnic entrepreneurs learn to experiment, adjust quickly, and develop alternative strategies for gathering insights.

Overall, while market information is undoubtedly important, its limited quality and accessibility in ethnic markets restrict its usefulness compared to financial markets. The findings suggest that entrepreneurs navigate this gap by leaning more on personal networks, lived experience, and adaptive trial-and-error strategies, rather than structured market intelligence.

3. *Past trends*- The interview data indicate that, unlike in financial markets where past trends are analyzed through sophisticated models and historical datasets, ethnic entrepreneurs rarely engage in such systematic forecasting. Instead, their use of past trends is informal, experiential, and often anecdotal. Rather than consulting structured data or statistical reports, participants reported drawing on personal experiences or observing the outcomes of other entrepreneurs in their communities. One respondent explained, *“We don’t have charts or trend analyses like in finance. We just remember what happened in the past years, or we look at how others in the same business are doing.”* Another added, *“If a neighbor’s restaurant did well during the summer, I assume my café will also get more customers then.”* This reliance on memory and observation highlights how past performance is used as a proxy for forecasting, but without the rigor of formal trend analysis.

While this approach provides some direction, it often leads to oversimplified assumptions and inaccurate expectations. Entrepreneurs may misinterpret short-term fluctuations as stable patterns or fail to account for broader changes in consumer behavior, regulations, or competition. For example, one participant said, *“Last year, winter was good for us, so I thought this year would be the same, but it was completely different.”* Such examples illustrate the risks of projecting past experiences directly onto future business outcomes.

Nevertheless, the reliance on past trends also reflects the adaptive strategies of entrepreneurs working in markets where systematic data are scarce or unavailable. In the absence of institutionalized market intelligence, entrepreneurs use personal histories and community knowledge as practical, albeit imperfect, tools for decision-making. This highlights both the ingenuity and vulnerability of ethnic entrepreneurs: while they creatively navigate uncertainty, they remain exposed to misjudgments rooted in the limitations of experiential trend analysis.

5.1.4. Ethnic entrepreneurship related matters

5.1.4.1. Motivations of the EEs

The analysis of the interviews reveals that ethnic entrepreneurs pursue business ownership for multiple, often interrelated, motivations (see Table 14 and Figure 14). A strong theme was the desire for independence, with several participants explicitly stating their preference to *“be my own boss”* rather than remain dependent on employers in the host country. Others emphasized necessity-driven motives, explaining that the lack of suitable employment opportunities, compounded by language barriers or the non-recognition of foreign credentials, left entrepreneurship as their most viable option. One participant explained, *“Since no company accepted my qualifications, I had no choice but to create my own work.”* For these entrepreneurs, self-employment functioned as a response to limited opportunities and a practical solution for economic survival. At the same time, opportunity-driven motivations also emerged. Some participants highlighted their ability to recognize gaps in the local market and to draw on personal skills or family traditions to establish businesses. As one entrepreneur noted, *“I saw a service that was missing here, and I thought, if I don’t take this chance, someone else will.”* Such accounts demonstrate that entrepreneurship was not only reactive to constraints but also proactive in seizing opportunities for growth and innovation.

Beyond individual aspirations, social motivations also played a significant role in shaping entrepreneurial decisions. Several interviewees emphasized that their choice to pursue entrepreneurship was not only personal but also tied to the wellbeing of their ethnic community. They perceived entrepreneurship as a means to confront structural disadvantages and discrimination, while simultaneously creating opportunities and support systems within their networks. As one respondent explained, *“In an environment of unemployment and discrimination,*

ethnic-owned economies accelerate wealth creation, income generation, career options, and social mobility for ethnic groups.” This perspective underscores entrepreneurship as both an individual pathway to advancement and a collective mechanism for strengthening community resilience.

Overall, the findings suggest that ethnic entrepreneurship is motivated by a complex interplay of necessity, opportunity, and social empowerment. While many participants were driven by personal independence or economic need, others interpreted their entrepreneurial efforts as a pathway to improve not only their own lives but also the status and prospects of their wider communities.

TABLE 14. THE REASONS FOR IMMIGRANTS' ENTREPRENEURSHIP IN THE HOST COUNTRY

Motivation		N	%
Monetary gains	Business venture, whether it is entrepreneurial or conventional, has the ultimate motive of generating profit. Entrepreneurs and the EEs also want maximum gains in terms of money. This can either be in the form of income or as business profit.	13	65
More Freedom and authority	In general, entrepreneurial systems grant more freedom than conventional ones. They have more authority, which also makes them self-accountable. Small business owners usually start their own businesses to be their own boss. Being the own boss enables an entrepreneur to control the business and make decisions about how it is run. This tendency is more intense in ethnic entrepreneurs.	11	55
Creative control	It is a motivation that keeps entrepreneurs going and helps them achieve their goals. Every creative decision must be aligned with the vision of entrepreneurs. To attract a particular base, every creative decision must be taken to achieve this goal, from product design to marketing strategies.	7	35
Great influence	Wanting to have a greater influence over a product's development, marketing, or customer base is a significant motivator for someone to break away from a career path and start their own businesses. It can also appeal to people who want to have a lasting impact or legacy in an industry, as starting a company sets them apart.	4	20
Job creation	In addition to creating a job for himself / herself, an entrepreneur creates jobs directly, by hiring employees to work in entrepreneurial ventures, and indirectly, by creating demand for goods and services, which leads to job creation in other businesses like manufacturing, packaging, and fulfillment.	14	70
Unemployment	Many immigrants, despite their previous knowledge and experience, encounter much more difficulties finding a traditional job than the natives. So, with entrepreneurship, they solve the unemployment problem of themselves and probably some of their family members and co-ethnics.	12	60
Using blocked opportunities	Migrants would invest in sectors whose unattractive conditions (long working hours, low return on investments, etc.) put off their previous owners. So, the EEs start a business when they identify an unsatisfied customer need in ethnic environment. .	8	40
Existence of ethnic and social networks	Existence of ethnic and social networks plays a major role in motivating immigrants towards entrepreneurship. Normally, the EE start with a focus on clients from their own ethnic group, with traditional products, services, and communication channels. This internal orientation and the mutual trust within the ethnic network provide a protected market and a proper labour force and create a loyalty between the ethnic firm and his clients.	11	55
Family Networks, relatives and co-ethnics	Family, co-nationals and co-ethnics networks give minorities the impetus for entrepreneurship. According to authors, they are the factors through supporting the EEs give them the necessary self-confidence for entrepreneurship. The EEs have privileged access and flexibility to information, capital, and labor through the networks.	9	45
Taking benefit from a previous experience	Because of the precise selection systems, most immigrants are talented people who are selected based on their previous knowledge and experience. Thus, most of them are sure that their knowledge and experience are relevant to start a business in the same field they were working at home before.	8	40

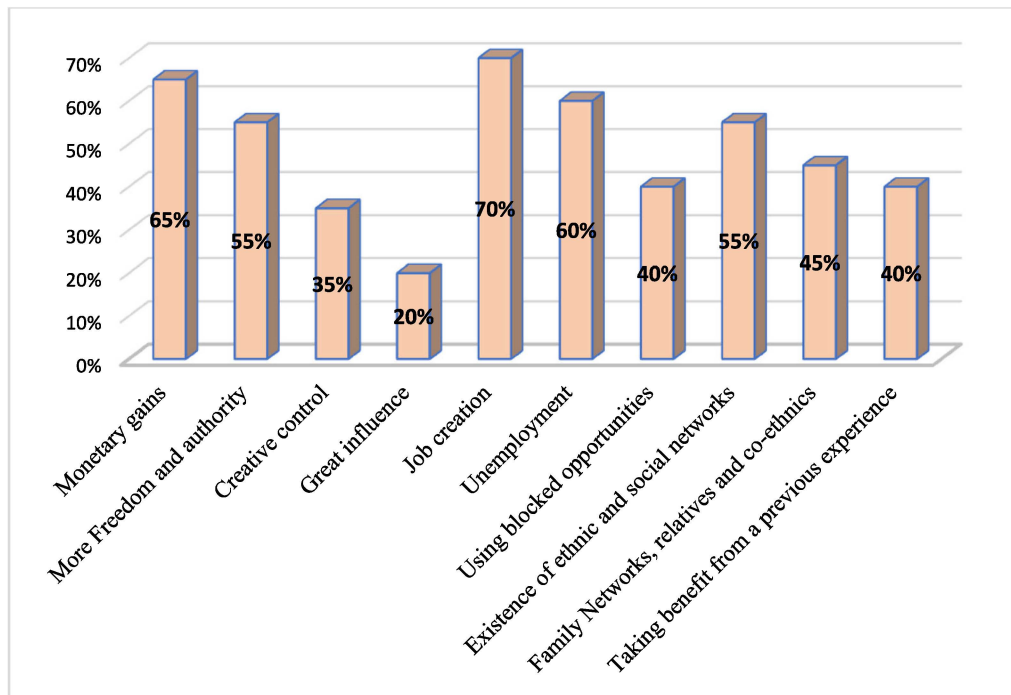


FIGURE 14. THE REASONS FOR IMMIGRANTS' ENTREPRENEURSHIP IN THE HOST COUNTRY

As the data reveal, the most frequently mentioned motivations among ethnic entrepreneurs were related to addressing unemployment challenges and creating jobs for themselves, their family members, and co-ethnics, alongside the need to generate income. However, the analysis also highlights that non-financial motives, such as gaining independence, achieving social recognition, and contributing to community development, played an equally significant role in shaping their entrepreneurial endeavors.

5.1.4.2. Ethnic entrepreneurs' challenges and issues

Analysis of the interview data indicates that ethnic entrepreneurs encounter a range of interrelated challenges that significantly influence their entrepreneurial trajectory. (Table 15 and Figure 15) Foremost among these are financial constraints and the lack of credit or credibility in the host country. Many participants emphasized that the absence of an established financial history or recognized experience in Canada severely restricted their ability to secure loans. As one entrepreneur explained, *"I applied for a loan several times, but because I was new here, they told me I had no experience. Without credit, it is very difficult to expand the business."* Consequently, most were forced to rely on personal savings, family contributions, or community-based support

systems, which not only constrained growth opportunities but also heightened financial pressures in the early stages of business development.

Language barriers were also a dominant theme, particularly in Quebec where French proficiency is a necessity. Several participants admitted that limited fluency in French or English created difficulties in communication with customers, suppliers, and institutions. One interviewee explained, *“I had good experience in my home country, but here I couldn’t even explain my business plan properly. Not speaking French well made everything twice as hard.”* This barrier often delayed business negotiations and reduced confidence in approaching broader networks outside the ethnic community. Closely connected to this was the issue of social integration. Participants reported that limited local connections made it difficult to access mainstream networks of customers, suppliers, or mentors. Many relied heavily on co-ethnic networks in the early stages, which, while helpful, also restricted their market reach. As one entrepreneur reflected, *“In the beginning, almost all my customers were from my community. It’s good, but you can’t grow much if you only sell inside your circle.”*

Another recurring theme was adaptability to the new environment. Entrepreneurs described the challenge of adjusting to unfamiliar regulations, taxation systems, and administrative requirements. This adaptation process was often described as stressful and time-consuming. For example, one participant noted, *“Back home, I knew how everything worked. Here, every small thing, from taxes to licenses, is different. I lost a lot of time just learning how to survive in this system.”* Operational problems were also highlighted, particularly related to navigating bureaucratic processes and managing day-to-day business under unfamiliar conditions. This was compounded by strong competition from both native-born and other immigrant entrepreneurs. Several participants observed that breaking into an already saturated market required additional effort and resources. As one respondent stated, *“The market here is very competitive. You are not only competing with Canadians, but also with other immigrants who arrived before you and already built a reputation.”*

Taken together, these findings underscore that the challenges of ethnic entrepreneurship are both structural and personal. While adaptability and determination were evident among participants, structural barriers such as lack of credit access, language requirements, and regulatory complexities placed ethnic entrepreneurs at a disadvantage compared to native-born business

owners. The frequency of these issues, particularly financial constraints, language barriers, and integration challenges, demonstrates that they are not isolated incidents, but systemic obstacles faced by many immigrant entrepreneurs.

TABLE 15. ETHNIC ENTREPRENEURSHIP ISSUES AND CHALLENGES

Problem / challenge		N	%
Adaptability	Ethnic entrepreneurs must continually adapt to many factors to which native-born in host countries may be oblivious. It is the process of change in response to a new environment.	14	70
Financial constraints	Ethnic entrepreneurs most common problems are related to finance, like finding money to finance projects, lack of capital, difficulty in obtaining bank finance, covering current costs, etc.	13	65
Unfamiliarity with new environment	Factors such as the fiscal environment, labour market regulations, administrative complexities, intellectual property rights, bankruptcy law will determine the decision of the EEs. Lack of familiarity with these factors creates problems for the EEs.	10	50
Language barriers	Language is more than just a means of communication. It is also a source of identity, culture, and social capital. For immigrant entrepreneurs, language can be both an asset and a challenge in their business endeavors. Depending on the context, language can facilitate or hinder their access to markets, customers, partners, suppliers, employees, and investors. The EEs' common language barriers and challenges in the host countries are lack of proficiency in the dominant language of the host country, lack of familiarity with the business jargon and etiquette, lack of access to information and networks, lack of recognition and appreciation of their native language and culture etc.	15	75
Social integration	Cultural diversity in host regions presents challenges for migrant entrepreneurs, such as resource competition and social conflicts.	13	65
Operational problems	Some ethnic entrepreneurs decide to start a business under certain circumstances. thus, some of them do not have much previous experience about the business. This causes various operational problems such as prolongation of time, increase in costs, lack of business model, poor planning, high operating costs, unsuitable control of the business operations, misunderstanding of the business complex environment etc.	8	40
Strong native and non-native competitors	For various reasons, many ethnic entrepreneurship are small. Therefore, they are not able to compete with large native and non-native competitors who have a large share of the market.	7	35
lack of credit rating	Ethnic entrepreneurs, who are often recent immigrants, lack the necessary credentials to start a business in a new environment. In the first few years, they limited contacts in the community. So, banks, financial institutions, suppliers and even potential customers do not know them yet well.	12	60
Discrimination	Discrimination prevents immigrants and systemically marginalized groups from finding gainful employment in the traditional labor market. So, it pushes people into starting a small business that can make these businesses hard to sustain.	7	35

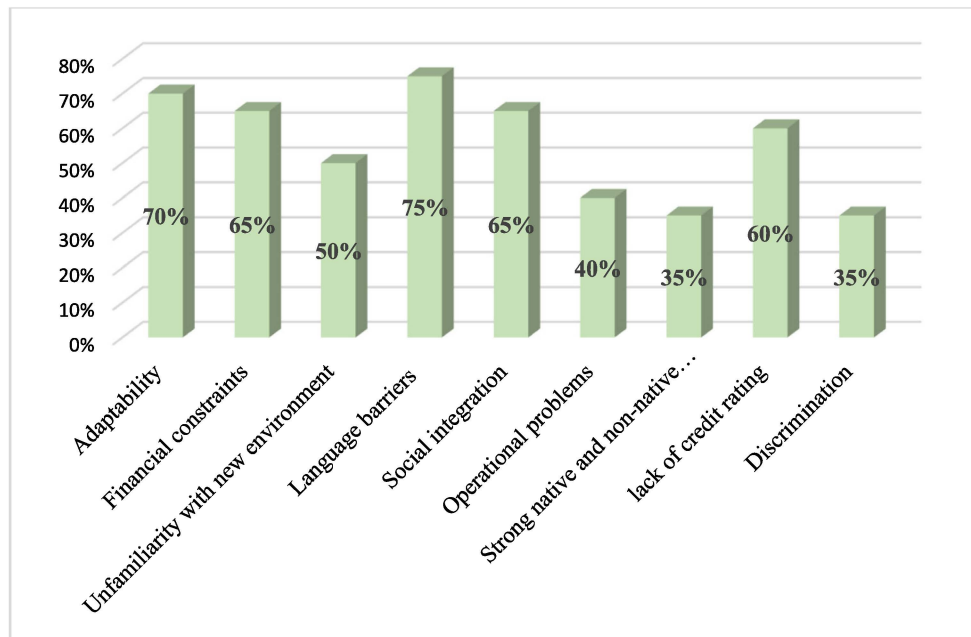


FIGURE 15. ETHNIC ENTREPRENEURSHIP ISSUES AND CHALLENGES

Overall, the analysis highlights that the most prominent challenges for ethnic entrepreneurs are adapting to the new business environment and achieving social integration, with language barriers and communication difficulties playing a particularly significant role.

5.1.4.3. Ethnic entrepreneurs' alternatives

The interviews indicate that ethnic entrepreneurs often consider multiple alternative strategies when facing challenges or seeking growth opportunities (Table 16 and Figure 16). These alternatives reflect both proactive and reactive approaches, ranging from selling the business, changing the domain of business, forming partnerships, buying a franchise, relocating to another city or province, moving to another country, returning to the home country, or even closing the business. Among these options, partnerships, buying a franchise, and moving to another city or province emerged as the most frequently mentioned strategies, highlighting their perceived feasibility and effectiveness. Specifically, twelve participants reported considering partnerships, ten expressed interests in buying a franchise, and eleven mentioned relocating within the country as a viable option.

Partnerships were frequently highlighted for their ability to combine skills, resources, and networks, reducing the burden on a single entrepreneur. One participant noted, *"I realized that I couldn't do everything alone, so I started looking for someone with complementary skills. A*

partner can bring experience and networks that I don't have.” Similarly, buying a franchise allowed entrepreneurs to leverage an established brand, operational framework, and customer base, minimizing uncertainty and the risks associated with starting a business from scratch. As one respondent explained, *“Starting a franchise gave me a blueprint to follow and a brand that customers already trust. It reduced the guesswork and risk.”* Relocating to another city or province was often pursued to access larger markets, better infrastructure, or a more supportive business environment. A participant shared, *“Business was slow in my first location. Moving to a bigger city opened more opportunities and customers, and it made the business viable.”*

These alternatives frequently serve to address operational and financial challenges, enhance market access, or secure long-term sustainability. The data suggest that ethnic entrepreneurs demonstrate flexibility and strategic thinking, carefully weighing risk, opportunity, and personal circumstances when determining the most suitable course of action. The consistent mention of partnerships, franchising, and relocation underscores their importance as adaptive strategies in navigating the complexities of immigrant entrepreneurship.

TABLE 16. ETHNIC ENTREPRENEURSHIP ALTERNATIVES

Alternative	N	%
Selling the business	7	35
Changing domain of business	3	15
Partnership	12	60
Buying a franchise	10	50
Moving to another city/province	11	55
Moving to another country	4	20
Go back to home country	1	5
Closing the business	5	25

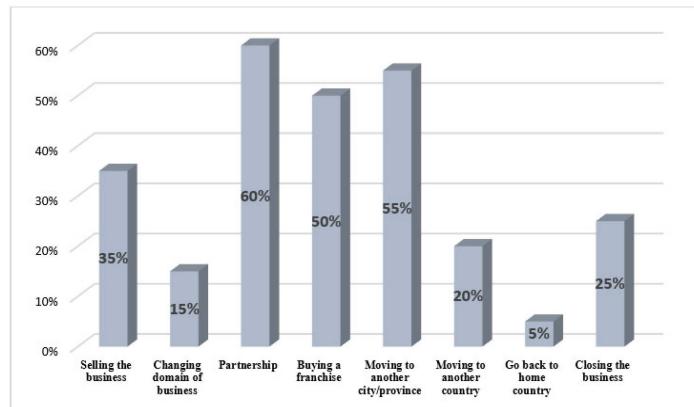


FIGURE 16. ETHNIC ENTREPRENEURSHIP ALTERNATIVES

The results indicate that most ethnic entrepreneurs, in the event of business failure, prefer alternatives that allow them to remain in the host country. Having experienced the challenges of immigration and the complexities of starting a business from scratch, they tend to choose strategies that minimize the risk of repeating past mistakes. This preference reflects both their familiarity with the local environment and a determination to adapt their approach, leveraging previous experience to improve the likelihood of future success.

5.1.4.4. *Ethnic Ties, Networks, and Entrepreneurial Support Systems*

The interviews revealed that ethnic ties and networks constitute one of the most significant resources influencing the entrepreneurial success of ethnic entrepreneurs. These networks, composed of family members, friends, community associations, and other co-ethnic actors, provide crucial financial, informational, and emotional support. Many participants noted that their first customers and partners often came from within their own ethnic communities. This initial trust and familiarity helped them establish their businesses and gain early stability. One entrepreneur mentioned, *“My community was my first market; they supported me before others even knew about my business.”*

Another key factor emerging from the interviews was human capital, which includes education, previous work experience, and practical business knowledge. Participants emphasized that while their education provided general knowledge, the most valuable learning came from hands-on experience in the local business environment. They stressed the importance of understanding local regulations, consumer behavior, and management practices, noting that such learning often came through trial and error.

Family support was consistently described as a foundation of entrepreneurial activity. Families provided not only financial backing but also moral encouragement and unpaid labor in the early stages of business development. However, several participants also noted that family involvement could lead to tension or conflict over business decisions. Despite these challenges, most agreed that without family support, starting and sustaining a business would have been far more difficult.

Transnational networking emerged as another strong theme. Many entrepreneurs-maintained business relationships across borders, often importing goods, relying on overseas suppliers, or serving customers from diaspora communities. These transnational connections allowed them to access resources and markets unavailable locally. One entrepreneur explained, *“I import products from my home country because people here still want authentic goods—they trust what comes from back home.”*

The analysis also revealed the influence of individual characteristics, including resilience, adaptability, and persistence. Participants described their journey as a continuous process of overcoming obstacles, such as language barriers, discrimination, and limited access to finance, by

relying on determination and creativity. Many shared stories of personal growth and transformation, describing entrepreneurship as both a professional and emotional journey that required courage and optimism.

A less visible but important aspect identified in the interviews was the intermediary role between capital and labor. Several entrepreneurs described themselves as “bridges” connecting immigrant workers, suppliers, and local markets. Their bilingual or bicultural backgrounds allowed them to mediate between different groups, enabling smoother transactions and mutual understanding. This intermediary position not only strengthened their businesses but also enhanced their social standing within both the ethnic and broader communities.

Training and familiarization with the new environment were also seen as essential for success. Many participants emphasized the importance of learning about local business norms, legal requirements, and consumer expectations. Those who participated in training programs or mentorship initiatives reported higher confidence and better adaptation to the Canadian business environment. In addition, satisfaction of ethnic customers was mentioned as a central motivation for many entrepreneurs. They viewed their customers not only as clients but as members of a shared cultural community whose needs and preferences they understood deeply. Maintaining customer trust, offering culturally relevant products, and providing personalized service were seen as vital for business growth and loyalty.

Finally, participants discussed the importance of relations with broader communities beyond their ethnic group. While ethnic networks provided initial support, integration into mainstream business circles, through partnerships, local business associations, or municipal programs, was often necessary for long-term success. Entrepreneurs who built these wider relationships reported greater visibility, access to new clients, and increased credibility in the market.

Overall, the findings reveal that ethnic entrepreneurship operates within a complex ecosystem of social ties, personal characteristics, and contextual opportunities. The interplay between ethnic solidarity, family commitment, transnational linkages, and individual initiative enables these entrepreneurs to navigate challenges, seize opportunities, and sustain their ventures in a competitive and multicultural environment. Table 17 and figure 17 show the EEs’ success factors and the frequencies extracted in this study.

TABLE 17. THE ETHNIC ENTREPRENEURSHIP SUCCESS FACTORS

Success factor		N	%
Ethnic ties and networks	Ethnic ties and networks provide the basis for trust that supports various forms of economic activities among co-ethnics. This social structure is inherent in the national culture of immigrants and helps with ethnic entrepreneurship success in the host country.	13	65
Human capital	Immigrant community members and co-ethnics are a valuable human resource that is always available to the EEs. They have obvious assets such as high level of education and sound experience whose use by the EEs can increase the probability of their success.	11	55
Family	Family is an institution from which immigrants often draw their social capital in pursuit of economic advancement, especially more so in the early phases after migration. So, the family provides financial and human resources, and spiritual support and it has a significant influence on the success of ethnic entrepreneurship in host country.	15	75
Transnational networking	Transnational networking is identified as activities that bridge national borders, carried out by ethnic entrepreneurs mainly with their homeland and aimed at both leveraging and utilizing mutually shareable assets such as information, contacts, and trust. It plays an important role in promoting the performance of ethnic entrepreneurial firms.	7	35
Individual characteristics	It is generally known that certain groups of immigrants and ethnic minorities are more entrepreneurial and more likely than others to adapt small business ownership in their quest for socioeconomic mobility. These group of immigrants have special characteristics. These features which play an important role in the success of the EEs. are self-reliant, assertive, has leadership abilities, willing to take risks, makes decisions easily, self-sufficient, dominant, acts as a leader, competitive, ambitious, independent, analytical, skilled in organizing, sound judgment, influential, manager, foresighted etc.	14	70
Intermediary role between capital and labor	A successful entrepreneur is a person who can play an intermediary role between capital and human resources who are of the co-ethnic groups. He/ she acts well in business and industry choices, financing strategies, growth patterns, etc. Effective performance of such a role increases the probability of success of the EEs.	5	25
Training and familiarization with the new environment	After settling in the host country, immigrants usually receive various trainings. Learning the language of the host country, getting to know the public and business environment, familiarity with laws and regulations, strengthening communication and social relations, and technical training are among these measures. Entrepreneurs who take these courses effectively will be more successful.	10	50
Satisfaction of the ethnic customers	Ethnic entrepreneurs mainly focus on specific customers who are often of their ethnicity. The customers' satisfaction plays an important role in the success of immigrants' businesses, guarantees the permanence of the customers. and increases the sustainability of the ethnic entrepreneurship. Their satisfaction eventually attracts non-native customers as well.	16	80
Relation with communities	The communities in the host countries, play a critical role in providing advice, guidance, training and generally helping the immigrants. The effective communication of ethnic entrepreneurs with these communities has positive effects, including helping to introduce them among ethnic and non-ethnic groups, financial and tax consultation, legal affairs, etc.	12	60

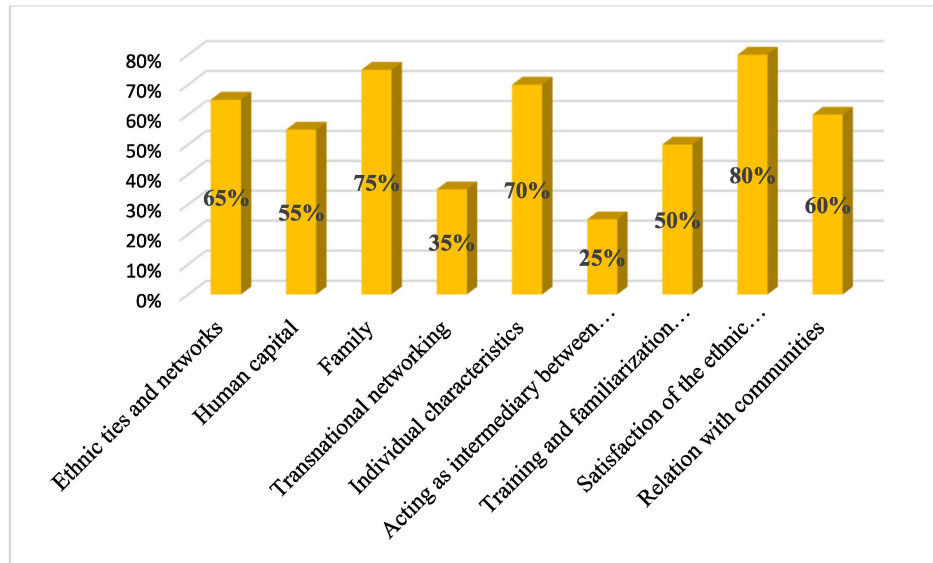


FIGURE 17. THE ETHNIC ENTREPRENEURSHIP SUCCESS FACTORS

As shown in the table and figure, family support, customer satisfaction, and ethnic ties and networks emerged as the most frequently cited factors among participants. However, the influence of the other factors, such as human capital, transnational networking, individual characteristics, intermediary roles, training, and community relations, also proved to be significant in shaping the overall entrepreneurial experience.

These findings collectively underscore the multidimensional character of ethnic entrepreneurship, where social, psychological, and structural elements converge to shape entrepreneurial behavior and decision-making. While the qualitative phase provided valuable insights into the lived experiences, motivations, and adaptive strategies of ethnic entrepreneurs, the next section turns to quantitative analysis to empirically assess and validate these relationships. This subsequent phase employs statistical techniques to measure the strength and direction of the connections identified, offering a broader and more generalizable understanding of the patterns initially uncovered through qualitative inquiry.

5.2. QUANTITATIVE ANALYSIS

The second part of this chapter focuses on quantitative data analysis to test hypotheses and explain research findings. The quantitative analysis examines how behavioral finance factors influence decision-making processes among ethnic entrepreneurs, who often exhibit cognitive

biases. Furthermore, it examines how decision-making influences the application of project management methodology (PM2) components and, in turn, the success of the investment projects of ethnic entrepreneurs. This section also examines the moderating role of PM2 in the relationship between behavioral finance and the success of ethnic entrepreneurs' investment projects. In addition, the effects of financial literacy and the business environment on these relationships are assessed.

The analysis begins with a demographic overview of the participants, followed by descriptive and inferential statistical techniques. Descriptive statistics assess the distribution of variables, examine the normality of data, and perform exploratory factor analysis to refine measurement scales by reducing dimensions while preserving critical information. Structural equation modeling, performed with Smart PLS4 software, provides the main framework for validating research instruments and testing the fit of the conceptual model. In parallel, SPSS 27 was used to conduct descriptive data analysis, offering detailed summaries of participants' demographic characteristics and other key variables. Additionally, SPSS facilitated preliminary data checks, including assessing distributions, identifying missing values, and performing reliability tests, thereby ensuring the dataset was robust and suitable for subsequent SEM analysis in Smart PLS.

5.2.1. Descriptive analysis

This section presents the frequency distribution of the participants' demographic and general characteristics. The analysis provides an overview of respondents' profiles, offering initial insights into the composition and background of the study sample

5.2.1.1. Demographics of the participants

As Table 18 indicates, a total of 183 ethnic entrepreneurs completed the hard paper and online survey questionnaire, of these, 55.2% were males and 43.7% female. The age of the respondents ranged from 23 to 75+ with the age groups of 41-50 and ≥ 51 being the highest participants at 35.5% and 36.6% respectively. The French language level of 55% of the participants was below intermediate and 45% was above intro. Almost 28% have been able to speak French fluently. This situation is slightly different in the English language level as it was 17.5% (below intermediate) versus 80% (intermediate and above). 48.7% states they can speak English fluent.

TABLE 18. STATUS OF THE PARTICIPANTS' DEMOGRAPHICS.

Variable		N	F	%
Gender	Male	101	0,552	55,2
	Female	80	0,437	43,7
	Missing	2	0,011	1,1
Age	≤ 20	0	0,000	0,0
	21-30	10	0,055	5,5
	31-40	34	0,186	18,6
	41-50	65	0,355	35,5
	≥ 51	67	0,366	36,6
	Missing	7	0,038	3,8
French level	Elementary	83	0,454	45,4
	Pre-intermediate	17	0,093	9,3
	Intermediate	25	0,137	13,7
	Upper-intermediate	32	0,175	17,5
	Advance	20	0,109	10,9
	Missing	6	0,033	3,3
English level	Elementary	13	0,071	7,1
	Pre-intermediate	19	0,104	10,4
	Intermediate	58	0,317	31,7
	Upper-intermediate	51	0,279	27,9
	Advance	38	0,208	20,8
	Missing	4	0,022	2,2
Education	Secondary	10	0,055	5,5
	Collage dip. / cert.	84	0,459	45,9
	Bachelor's degree	62	0,339	33,9
	Master's degree and higher	25	0,137	13,7
	Missing	2	0,011	1,1
PR./ Citizen	Yes	137	0,749	74,9
	No	45	0,246	24,6
	Missing	1	0,005	0,5

Furthermore, more than 94% of the respondents had a college diploma / certificate, or higher. However, the highest frequency with 45.9% belongs to the participants with a college degree, then with 34% to the individuals with bachelor's degree. Finally, 75% of the participants were permanent residents / citizens, while 24.6% were temporary residents or are seeking the PR.

5.2.1.2. Frequency distribution

This section presents the frequency distribution of nominal items designed to provide general information about the participants. Although these variables contribute valuable contextual

insights for interpretation in the discussion and conclusion sections, their nominal scale nature precludes their inclusion in further statistical analyses.

1. Native language- The first item examines the participants' native languages. As ethnic entrepreneurs come from diverse countries, they speak a variety of languages, which plays a key role in their business activities. Utilizing their native languages provides a dual benefit: it enables effective communication and service delivery to co-ethnic communities while also helping entrepreneurs overcome potential language barriers. The distribution and frequency of the participants' native languages are summarized in Table 19 and illustrated in Figure 18.

TABLE 19. NATIVE LANGUAGES OF THE PARTICIPANTS

Language	N	%	Language	N	%
French	15	8,20	Pashto	12	6,56
English	12	6,56	Spanish	13	7,10
Chinese	17	9,29	Hindi	11	6,01
Arabic	28	15,30	Italian	4	2,19
Persian	21	11,48	Korean	5	2,73
Romanian	6	3,28	Russian	4	2,19
Turkish	7	3,83	Bangali	3	1,64
Dari	19	10,38	Others	6	3,28
Total				183	100

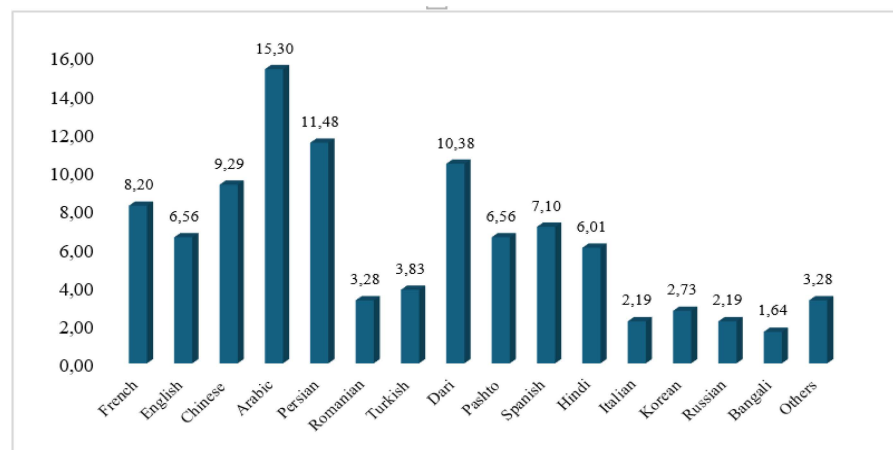


FIGURE 18. NATIVE LANGUAGES OF THE PARTICIPANTS

As shown in Table 19 and Figure 18, Arabic and Persian are the most frequently reported native languages, representing 18.3% and 12.7% of the sample, respectively. The remaining languages fall within this range of frequencies.

2. *Type of business*- A general overview of the participants' investments indicates that they operate a variety of businesses, spanning both manufacturing and service sectors. However, the majority are small-scale enterprises that can be established and managed with relatively low capital. Table 20 and Figure 19 present the types of businesses, along with their frequencies and percentages.

TABLE 20. TYPES OF ETHNIC ENTREPRENEURSHIP BUSINESSES

Industry	N	%
Industrial repair	8	4,37
Food services	41	22,40
Retail	30	16,39
Real estate	10	5,46
Professional & technical services	11	6,01
Automotive	9	4,92
Antiques and collectables	6	3,28
Fashion and cloths	17	9,29
Non-Profit	5	2,73
Construction	9	4,92
Finance and insurance	13	7,10
Transportation & taxi	7	3,83
Daycare & healthcare	9	4,92
General services	8	4,37
Total	183	100

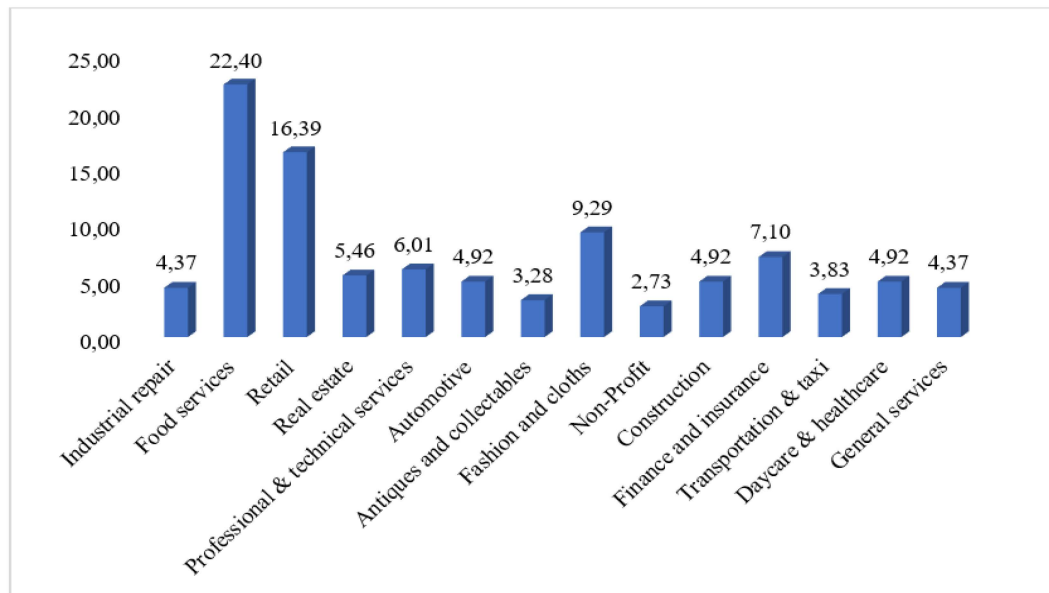


FIGURE 19. TYPES OF ETHNIC ENTREPRENEURSHIP BUSINESSES

As shown in the table and figure above, the most common types of businesses among ethnic entrepreneurs are food-related services and industries, including restaurants, bakeries, pastries, and coffee shops, accounting for 22.4% of the sample, followed by retail businesses at 16.4%. The frequencies of the remaining business types fall between these two categories.

3. Related knowledge and experience- Research indicates that immigrant investors often do not initially plan to start businesses in their host countries. Many turn to entrepreneurship as a means to overcome social disadvantages and address post-immigration challenges. As a result, some lack prior knowledge or experience relevant to their current business activities. Table 21 and Figure 20 present the frequency of participants' responses regarding this aspect.

TABLE 21. RELATED KNOWLEDGE AND EXPERIENCE

...	Frequency	Percentage
Yes	128	69.9
No	54	29.5
Missing	1	.5
Total	183	100

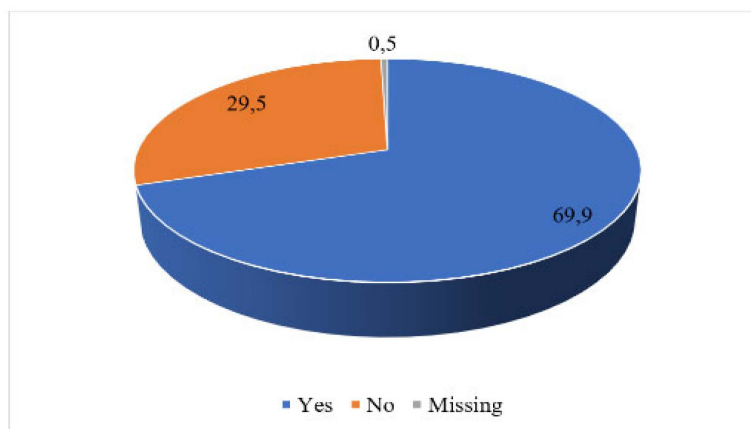


FIGURE 20. RELATED KNOWLEDGE AND EXPERIENCE

As shown in Table 2 and Figure 2, approximately 29.5% of ethnic entrepreneurs reported having no prior knowledge or experience relevant to their current businesses in the host country, while about 70% indicated that they possess sufficient knowledge and experience. These responses reflect the combined knowledge and experience acquired both in their country of origin and in the host country.

4. *Canadian/ non-Canadian experience*- In general, business conditions and operational practices in Canada differ from those in the countries of origin of many immigrants. This distinction was highlighted by several participants in the qualitative section of the study. Consequently, experience gained in Canada can play a critical role in the success of ethnic entrepreneurs, although prior experience from their countries of origin also contributes positively.

TABLE 22. CANADIAN EXPERIENCE OF THE PARTICIPANTS

Experience		0- 1 year	1-5 years	6 – 10 years	> 10 years	Missing
Canadian	Frequency	51	58	42	31	1
	Percentage	27.8	31.7	23.1	16.6	.8
Non-Canadian	Frequency	86	64	22	10	1
	Percentage	46.8	34.9	11.9	5.6	.8

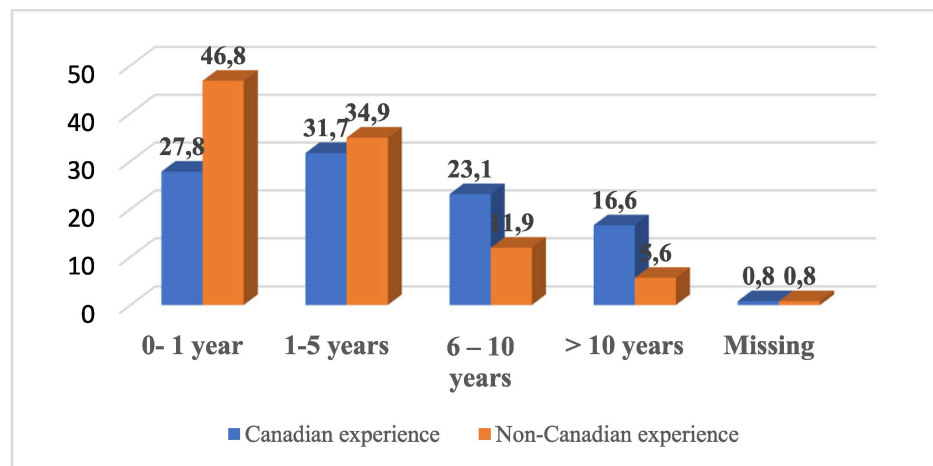


FIGURE 21. CANADIAN EXPERIENCE OF THE PARTICIPANTS

As presented in Table 22 and Figure 21, approximately 28% of ethnic entrepreneurs reported having either no Canadian experience or less than one year, while over 55% indicated that their Canadian experience ranges from one to ten years. In contrast, 47% of participants reported having either no non-Canadian experience or less than one year, and nearly 46% indicated that their non-Canadian experience falls between one and ten years. Additionally, the number of participants with more than ten years of Canadian experience exceeds those in the corresponding non-Canadian category.

5. *Prior intention for entrepreneurship*- Many individuals immigrate to the host country through skilled worker programs, generally expecting to seek employment in their respective fields. However, they often encounter challenges that lead them to start businesses, even without

prior intention. Table 23 and Figure 22 present the frequency and percentage of participants' responses regarding this phenomenon.

TABLE 23. PRIOR INTENTION FOR ENTREPRENEURSHIP IN HOST COUNTRY

...	Frequency	Percentage
Yes	116	63.5
No	66	35.7
Missing	1	.8

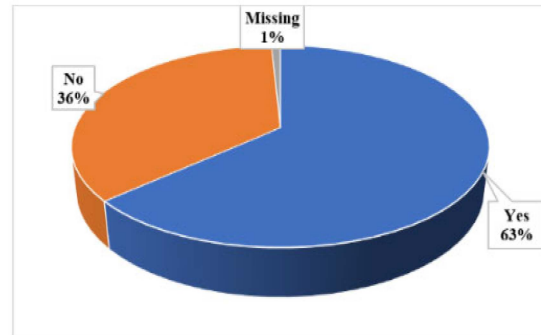


FIGURE 22. PRIOR INTENTION FOR ENTREPRENEURSHIP IN HOST COUNTRY

As shown in the table and figure above, approximately 36% of ethnic entrepreneurs reported having no prior intention to start a business in the host country, while 63.5% indicated that they had planned to pursue entrepreneurship before arriving. Nevertheless, the proportion of individuals without prior intentions remains notable.

6. Main motivation for entrepreneurship- In general, ethnic entrepreneurs exhibit diverse motivations for entering and operating businesses. Broadly, these motivations can be categorized as financial or non-financial. Table 24 and Figure 23 present the frequency of participants' responses regarding whether their primary motivation is financial or non-financial.

TABLE 24. THE EES MOTIVATIONS FOR ENTREPRENEURSHIP

Motivation	Frequency	Percentage
Financial and economic	111	61.1
Non-financial	69	37.3
Missing	3	1.6

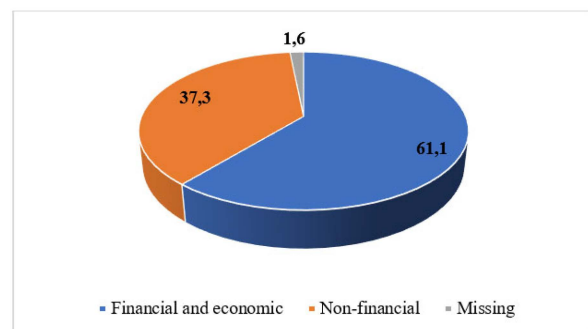


FIGURE 23. THE EES MOTIVATIONS FOR ENTREPRENEURSHIP

As shown in the table and figure, 61% of ethnic entrepreneurs reported financial and economic motivations for starting and operating their businesses, while 37% indicated non-financial motivations. Among the most frequently cited non-financial motives were the desire for

independence, achieving personal and family goals, having a flexible schedule, overcoming challenges such as unemployment and discrimination, pursuing passion, deriving satisfaction from meaningful work, making a difference in their lives, applying previous knowledge and experience, strengthening social networks, and supporting ethnic communities.

7. Ethnic entrepreneurship Problems- Similar to their motivations, the challenges faced by ethnic entrepreneurs are diverse but can generally be classified into financial and non-financial categories. Table 25 and Figure 24 present the frequency of participants' responses regarding the difficulties they encounter in starting and operating businesses in the host country.

TABLE 25. THE EEs PROBLEMS AND CHALLENGES

Problem	Frequency	Percentage
Financial and economic	79	42,9
Non-financial	103	56,3
Missing	1	0,8

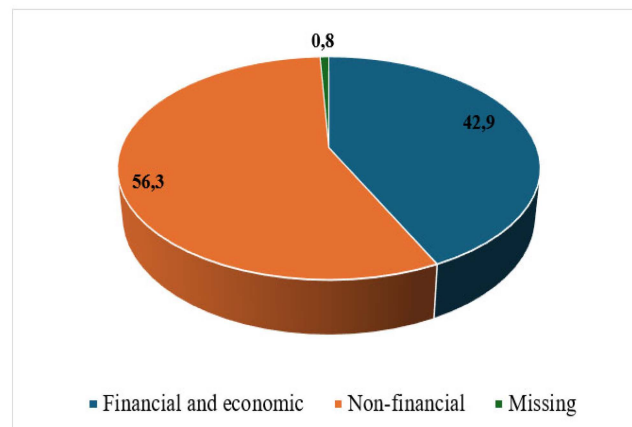


FIGURE 24. THE EEs PROBLEMS AND CHALLENGES

As shown in the table and figure, 43% of ethnic entrepreneurs identified financial and economic issues as their primary challenges in starting and operating a business, while 56% reported other types of difficulties. Among the most frequently cited non-financial challenges were adapting to the new environment, competing with large businesses, low market share and marketing strategy issues, effective communication, inadequate planning, lack of clear goals and direction, language barriers, limited credit history, and various operational problems.

5.2.1.3. Preliminary analysis: normality, reliability, and validity of measures

This research is built upon multiple factors, each comprising various variables. The condition of these factors and variables significantly influences their interrelationships and the overall research outcomes. Therefore, before analyzing the data to answer the research questions and test the hypotheses, it is essential to assess the status of these factors and variables, verify the normality of the data distribution, and confirm the validity and reliability of the measurement instruments.

1. Normality of the variables

Before conducting statistical analyses, it is crucial to assess whether the data follow a normal distribution. Normality tests help determine if the assumption of normality holds, which affects the choice of statistical methods. For this purpose, Kolmogorov-Smirnov and Shapiro-Wilk's tests ($\alpha = 0.05$) are used as needed. Table 26 indicates the results of these tests on the research's main variables.

TABLE 26. TESTS OF NORMALITY FOR THE MAIN VARIABLES

Factor	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistics	df.	Sig.	Statistics	df.	Sig.
Ethnic entrepreneurship	.165	183	.000	.945	183	.000
Behavioral finance	.075	183	.014	.984	183	.031
PM methodology	.099	183	.000	.973	183	.001
Financial literacy	.107	183	.000	.973	183	.001
Environmental factors	.056	183	.200	.992	183	.371

Note: a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Outputs from the normality tests indicate that the p-values for all factors except environmental, are below the 0.05 threshold, suggesting a statistically significant departure from normal distribution. As certain statistical analyses used in this study assume data normality, it was necessary to apply corrective measures. Therefore, the researcher performed normalization through z-score standardization and subsequent data reclassification to minimize skewness and improve distributional properties. Following this process, the updated descriptive statistics and results of the one-sample Kolmogorov–Smirnov test are presented in Table 27, confirming the improved distribution of these variables.

TABLE 27. ONE SAMPLE KOLMOGOROV-SMIRNOV TEST FOR THE MAIN VARIABLES

...		BF	The EEs	PM2	Literacy	Environment
N		183	183	183	183	183
Normal parameters ^{a,b}	Mean	2,5184	3,6258	2,8591	3,2029	3,0372
	Std. Deviation	,53644	,51719	,57543	,80408	,60342
Most Extrem Differences	Absolute	,087	,075	,099	,094	,056
	Positive	,087	,075	,056	,094	,049
	Negative	-,084	-,058	-,099	-,081	-,056
Test Statistic		1,179	1,015	1,345	1,271	,761
Asymp.Sig. (2-tailed) ^c		,124	,254	,054	,079	,608

a. Test distribution is Normal

b. Calculated from data

c. Lilliefors Significance Correction

As shown in Table 27, the significance levels for all variables, after the normalization process, were greater than 0.05, indicating that the data follow a normal distribution. Therefore, parametric rather than non-parametric statistical techniques were applied in data analysis. Subsequently, the reliability and validity of all questionnaire items were assessed.

2. Reliability

Another essential step before data analysis is assessing the reliability of the instrument. This was done using measures of central tendency and dispersion, as well as Cronbach's alpha¹, which specifically evaluates the internal consistency of the items. This approach estimates the reliability of participants' responses to the measures (Holmes et al., 2006). Table 28 presents the descriptive statistics and reliability coefficients for all measures.

TABLE 28. A CRONBACH'S COEFFICIENT OF THE VARIABLES

...		N	%	α Cronbach	Number of elements
Observations	Valid	177	96,7	.823	25
	Exclude ^a	6	3,3		
	Total	183	100,0		

a. Listwise deletion based on all variables in the procedure.

Table 28 shows that the value of Cronbach's Alpha coefficient (α) is 0.780. Generally, the accepted lower limit for Cronbach's α is 0.70 (Cronbach, 1970; Nunnally, 1978) for measurements

1. In social and behavioral research, in particular, Cronbach's alpha test is used as a reliability index (Liu et al., 2021). Since this research is in the field of behavioral finance and the questionnaire mainly consists of 5-point Likert measurements, Cronbach's alpha test has been used.

to be considered reliable, although according to Kline (1999) when dealing with related psychological concepts, reliability values of lower than 0.70 are acceptable because of the diversity of the measured concepts. Thus, in some cases, depending on the conditions and type of research, even situation lower than 0.7 can be acceptable¹ (Putnoky, Serban, Banu, Ursoniu, & Serban, 2022). However, as Table 29 indicates, Cronbach's α of the items in this research are more than 0.70, the internal reliability of the questionnaire is confirmed.

TABLE 29. DESCRIPTIVE STATISTICS AND RELIABILITY OF THE MEASURES

Factor	Descriptive Statistics		Normality deviations		Reliability		
	Mean	St.d	Skew.	Kurt.	T-test	Sig.	alpha
Performance	2,5082	2,5082	-.853	1.169	-8,416	,000	,800
Satisfaction	2,6284	2,6284	-.704	.591	-5,931	,000	,807
Sustainability	2,4973	2,4973	-.406	.167	-6,960	,000	,805
Adaptability	2,6612	2,6612	-.045	-.346	-5,402	,000	,805
Social effects	2,2459	2,2459	-1.175	1.336	-13,631	,000	,812
Optimism	3,4098	3,4098	-.843	.285	6,315	,000	,804
Over-confidence	3,6209	3,6209	-.460	.057	10,516	,000	,806
Availability	3,2568	3,2568	-1.589	1.447	4,533	,000	,805
Anchoring	3,3005	3,3005	-1.155	1.898	4,413	,000	,802
Representativeness	3,3077	3,3077	-.865	.998	3,555	,000	,806
Mental accounting	3,6758	3,6758	-.573	.652	10,156	,000	,801
Regret aversion	3,6448	3,6448	-0.006	-0.406	10,746	,000	,813
Framing	3,1694	3,1694	0.107	-0.157	2,493	,014	,835
Herding	2,6740	2,6740	-0.080	-0.482	-5,050	,000	,807
Market information	2,5304	2,5304	0.084	-0.171	-7,404	,000	,804
Past trends	2,4863	2,4863	-0.021	-0.027	-9,582	,000	,817
Agile management	3,1978	3,1978	-.865	.990	3,752	,000	,809
Portfolio management	2,8051	2,5879	-.694	.470	-6,852	,000	,810
Programme management	2,5879	2,8051	-.064	-.245	-3,157	,002	,812
Competence	3,4317	3,4317	.158	-.339	5,325	,000	,822
Professionalism	3,1749	3,1749	-.465	.236	2,536	,012	,819
Opportunity	2,9891	2,9891	-.249	.152	-,137	,891	,824
Microeconomics	3,0792	3,0792	.001	.641	1,345	,180	,815
Macroeconomics	3,0610	3,0610	-.193	-.513	1,333	,184	,819
Ecological factors	2,9500	2,9500	-1.236	1.286	-,970	,333	,816

1. For several reasons, $\alpha=.584$ is sufficient in this research. First, this study is in the field of behavioral finance, and its structured questionnaire measures the investment behavior of the EEs. Since the measurement of ethnic entrepreneurs' behavior along with the EEs' investment motivations, obstacles and decision-making compared to individual immigrant investors is relatively new and there is no similar research to compare the indicators, this number can be relied on to increase it in future research. In addition, because the research's sample is different from other similar studies, the researcher cannot rely on published studies (Salem, 2023).

As shown in the table, all measures produced the expected mean and standard deviation effects. Results of the Skewness and Kurtosis indicate that the variables scores are approximately normally distributed. Scores on each factor's measure show acceptable variability as evidenced by the *SD* and the fact that the observed range was relatively close to the theoretical one. Regarding internal consistency, all Cronbach's alpha coefficients were $\geq .70$. Therefore, overall, the measures reached an adequate level of reliability. On the other hand, the output of T-test shows that all variables (except the four last items) have a significant level of less than 0.05. This means that the variables have a significant difference with the average values. The signs of the T-test for the variables which are positive means that the values are higher than the average. In contrary, the signs of the T-test for the variables which are negative means that the values are lower than the average. Moreover, the standard deviation around 1 indicates the closeness of the participants' opinions about the research variables. In other words, it can be said that there is less outlier data.

3. *Validity*

As discussed in the previous chapter, several methods exist for assessing the validity of research instruments. Employing multiple approaches simultaneously enhances confidence in the accuracy and robustness of the data analysis. This section begins with construct validity, which includes both convergent and discriminant validity, to evaluate the extent to which the items accurately reflect the underlying theoretical constructs and differentiate them from one another. Criterion validity is subsequently assessed to determine how well the measures correspond to external or established benchmarks, providing additional evidence of the instruments' accuracy and relevance. Content validity, which was previously evaluated using expert ratings and the CVR/CVI indices, was addressed in the previous chapter and does not require repetition here.

3.1. Exploratory factor analysis- To assess the adequacy of the extraction method in exploratory factor analysis, the researcher employed the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy along with Bartlett's test of sphericity. This technique is used to group items into factors and to interpret each factor based on the items that load highly on it (Bryman & Cramer, 2002). According to Tabachnick and Fidell (2007), the factor analysis extraction method is considered acceptable if the KMO value is above 0.60 and Bartlett's test of sphericity is significant ($p < 0.001$). Therefore, if the KMO value is close to one (at least 0.60), the data are appropriate for factor analysis. The same criteria apply to Bartlett's test. Table 30 presents the results of these two tests.

TABLE 30. INDICES OF KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure Adequacy	.734	
Bartlett's test of Sphericity	Approx. Ch-square	1539.1633
	df.	300
	Sig.	<.001

Note: df= degree of freedom, Sig.= significant level

The KMO test output indicates that the test value is 0.734. Hence, the number of sample data is suitable for factor analysis. Thus, according to test KMO, the data have enough validity for analysis. On the other hand, significant level of Bartlett test is less than $p < .001$, and its' value is 1539.2. This situation illustrates that the structure of the relationships among the variables will not be the same. That is, there is a significant relationship among the variables. So, the validity of the data is confirmed in this regard.

Additionally, Table 31 is the cumulated results of a bivariate Pearson correlation test. Indicated therein are the degrees of association among the main factors.

TABLE 31. PEARSON'S CORRELATION AMONG THE VARIABLES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
performance	1																
sustainability	.539**	1															
adaptation	.520**	.466**	1														
satisfaction	.354**	.224**	.284	1													
Social effects	.382**	.214**	.280**	.331**	1												
Heuristic						1											
Prospect					.626**	1											
Market					.465**	.471**	1										
Agile								1									
Portfolio							.361**	1									
Program							.348**	.334**	1								
Competence										1							
Professional										.524**	1						
Opportunity										.375**	.416**	1					
MicroEco.													1				
MacroEco.													.690**	1			
Ecology													.478**	.469**	1		

Note: **. Correlation is significant at the 0.01 level (2-tailed).

The table demonstrates that the correlation coefficients of all variables related to each factor are between 0.3 and 0.7. This situation indicates a sufficient correlation among the variables, which states the validity of the research.

2.3. Convergent Validity- it is confirmed using structural equation modeling (SEM) following the guidelines of Fornell and Larcker (1981). The Average variance extracted (AVE) score for convergent validity should be greater than 0.5. This score is enough strong because it shows that more than 50% of the variation in the specific construct is due to the specified indicators. Figure 25 shows the output of the structural equation model of the variables using Smart PLS4.

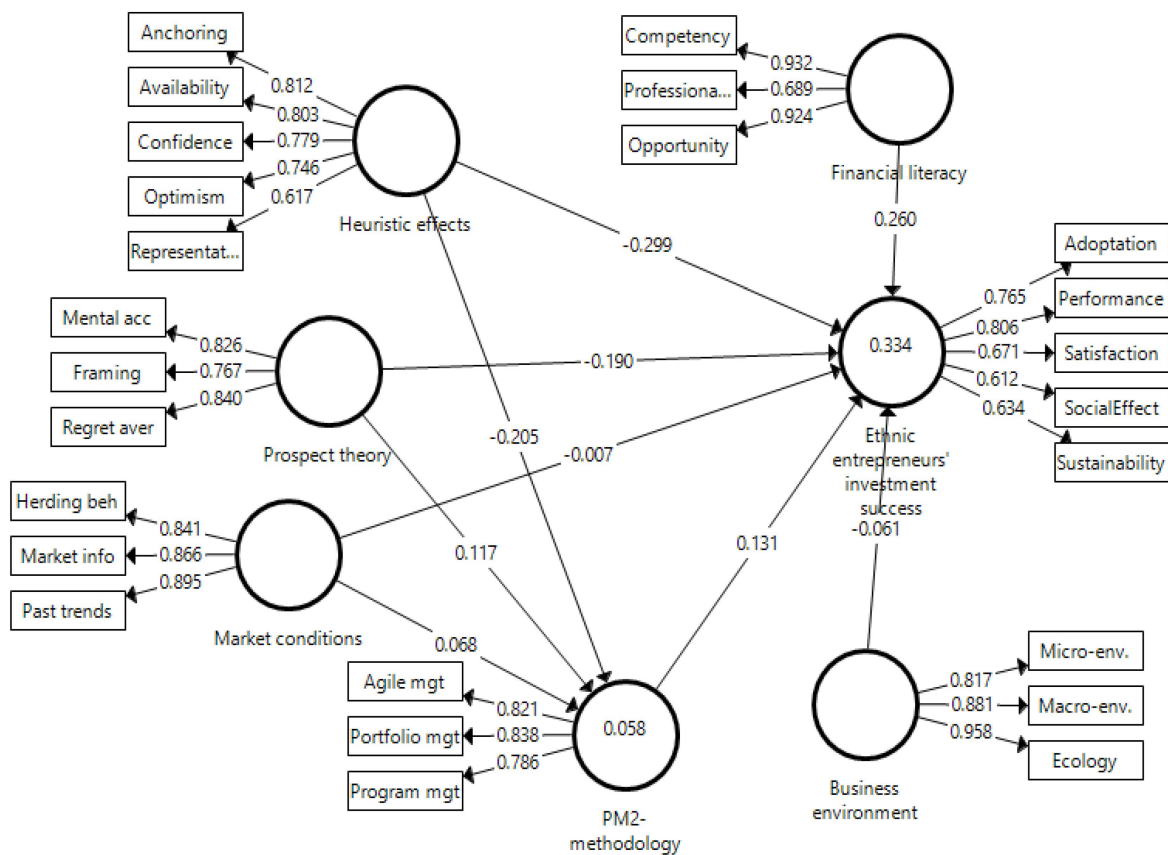


FIGURE 25. OUTPUT OF THE STRUCTURAL EQUATION MODEL

Based on outputs of the structural equation modeling (SEM) convergent validity of the research is calculated in Table 32. As the table illustrates, all constructs achieved the convergent validity level higher than 50%. Thus, the constructs achieved the level of internal consistency.

TABLE 32. CONVERGENT VALIDITY OF THE RESEARCH

Indicator	Relation	Latent variables	Category	Estimate	Suqare of Estimate	SUM	Number of items	AVE	Result
Excessive optimism	<---	A	Heuristics	0,746	0,5565	2,85	5	0,57	✓
Over-confidence	<---	A		0,779	0,6068				
Availability	<---	A		0,803	0,6448				
Anchoring	<---	A		0,812	0,6593				
Representativeness	<---	A		0,617	0,3807				
Mental accounting	<---	B	Perspective theory	0,826	0,7090	2,19	3	0,73	✓
Framing	<---	B		0,767	0,6162				
Regret aversion	<---	B		0,840	0,8649				
Herding behavior	<---	C	Market conditions	0,841	0,7073	2,25	3	0,75	✓
Market information	<---	C		0,866	0,7500				
Past trends	<---	C		0,895	0,8010				
Competency	<---	D	Financial literacy	0,932	0,8686	2,19	3	0,73	✓
Professionality	<---	D		0,689	0,4733				
Opportunity	<---	D		0,924	0,8538				
Performance	<---	E	The EEs' project success	0,806	0,6512	2,50	5	0,50	✓
Satisfaction	<---	E		0,671	0,4449				
Sustainability	<---	E		0,634	0,4058				
adaptation	<---	E		0,765	0,5837				
Social effects	<---	E		0,634	0,4058				
Agile management	<---	F	PM2	0,821	0,6724	1,22	3	0,66	✓
Portfolio management	<---	F		0,838	0,7006				
Program management	<---	F		0,786	0,6241				
Micro-environment	<---	G	Business environment	0,817	0,6659	2,35	3	0,78	✓
Macro-environment	<---	G		0,881	0,7779				
Ecological factors	<---	G		0,958	0,9158				

Note: AVE refers to Average Variance Extracted, a measure of how much variance in an indicator is captured by a latent construct, compared to measurement error. An AVE value of (0.50) or greater indicates that the construct explains at least (50%) of the variance in its indicators, which is the threshold for acceptable convergent validity.

3.3. Discriminant Validity- Discriminant validity was assessed to ensure that each construct in the study is empirically distinct from the others and that the items designed to measure one construct do not highly correlate with items measuring different constructs. In this study, discriminant validity was evaluated using both the Fornell-Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio, which are standard procedures in Smart PLS. The results presented in Table 33 indicate the extent to which the constructs are empirically distinct and measure unique aspects of the research model.

TABLE 33. DISCRIMINANT VALIDITY BASED ON FORNELL AND LARCKER AND HETEROTRAIT-MONOTRAIT CRITERIA

Construct	Fornell & Larcker ratio							HTMT ratio						
	BE	EEIS	FL	HE	MC	PM2	PT	BE	EEIS	FL	HE	MC	PM2	PT
Business env.	0,887							-						
EE' invest. suc	-0,111	0,702						0,150						
Financial liter	-0,010	0,438	0,856					0,105	0,562					
Heuristic effect	0,087	-0,474	-0,478	0,755				0,097	0,611	0,591				
Market conditi	-0,040	0,135	0,284	-0,126	0,937			0,067	0,158	0,333	0,142			
PM2-methodol	-0,010	0,217	0,184	-0,200	0,089	0,0885		0,057	0,374	0,221	0,230	0,099		
Prospect theory	0,129	-0,200	-0,033	0,089	-0,061	0,140	0,927	0,127	0,277	0,088	0,107	0,066	0,158	-

Note: Based on Fornell & Larcker ratio, discriminant validity is confirmed when the square root of each construct's AVE (diagonal values) exceeds its correlations with other constructs.

HTMT values < 0.90 indicate adequate discriminant validity, suggesting that the constructs are empirically distinct.

According to the Fornell-Larcker criterion, the square root of the Average Variance Extracted (AVE) for each construct exceeded the correlations between that construct and all other constructs, indicating that each construct shares more variance with its own indicators than with other constructs. Additionally, the HTMT ratios between the pairs of constructs were below the recommended threshold of 0.90, further confirming that the constructs are empirically distinct. These results collectively demonstrate that discriminant validity has been achieved, supporting the conclusion that the measurement model adequately differentiates among the study's latent variables and that subsequent structural analysis is based on reliable and well-separated constructs.

5.2.1.4. Collinearity Assessment

Before applying structural equation modeling (SEM) with the partial least squares (PLS) approach, it is essential to examine the assumption of non-collinearity among the independent variables. The absence of multicollinearity is a basic requirement of SEM, as high correlations between predictors can distort parameter estimates and weaken the validity of the model. There are several methods for testing collinearity among exogenous variables. The most common is examining the correlation matrix of independent variables. Correlations greater than 0.80 are generally considered an indication of multicollinearity (Donath et al., 2012; Farrar et al., 1967). In this study, as shown in Table 34, the correlations among variables were calculated. Although these correlations are statistically significant at the 0.01 level, none exceed the critical threshold of 0.80. Therefore, the results suggest that multicollinearity is not a concern in this dataset.

TABLE 34. MATRIX OF CORRELATION BETWEEN INDEPENDENT VARIABLES

	EO	OC	AV	AN	RP	MA	FR	RA	HB	MI	PT
Excessive optimism	1										
Overconfidence	,475**	1									
Availability	,463**	,605**	1								
Anchoring	,492**	,562**	,645**	1							
Representativeness	,316**	,375**	,367**	,315**	1						
Mental accounting	,209**	,163*	,144*	,162*	,180*	1					
Framing	,193**	,124*	,165*	,158*	,234**	,787**	1				
Regret aversion	,206**	,165*	,144*	,163*	,185*	,699**	,786**	1			
Herding behavior	-,281**	-,289**	-,340**	-,252**	-,269**	-,224**	-,286**	-,227**	1		
Market information	-,246**	-,291**	-,330**	-,233**	-,220**	-,239**	-,294**	-,238**	-,723**	1	
Past trends	-,282**	-,280**	-,339**	-,257**	-,273**	-,231**	-,291**	-,236**	,726**	,742**	1

Note: * p<0.05.

**p<0.01. Correlations without any asterisks are insignificant.

Correlations above 0.80 are typically viewed as an indication of multicollinearity, suggesting that the variables may overlap and distort regression estimates (Dormann et al., 2013; Gujarati et al., 2009)

In addition to correlation analysis, this study also examined variance inflation factor (VIF) and tolerance values. As presented in Table 35, all VIF values are below 5, which falls within the commonly accepted threshold (Jeng, 2023) and indicates the absence of problematic collinearity among the variables. Furthermore, several scholars recommend a more conservative cutoff of VIF < 3.3 in the context of PLS-SEM, and the results of this study also meet this stricter criterion, thereby confirming that collinearity is not a concern.

TABLE 35. VIF OF THE INDEPENDENT VARIABLES

Variables	EO	OC	AV	AN	RP	MA	FR	RA	HB	MI	PT
Tolerance	.675	.520	.485	.525	.768	.745	.357	.470	.404	.147	.569
VIF	1.468	1.804	2.062	1.959	1.221	1.151	1.376	1.679	1.598	2.414	2.727

Note: VIF < 5 → Generally considered acceptable; multicollinearity is not a serious issue.

VIF between 5 and 10 → Indicates moderate multicollinearity; may be tolerable depending on the context but should be checked carefully.

VIF > 10 → Problematic; strong multicollinearity is present, and corrective measures (e.g., removing/reducing variables, combining predictors, or using techniques like ridge regression) are usually needed (Jeng, 2023)

The VIF values for the variables are below 3, which is well within the commonly accepted threshold. This indicates that multicollinearity is not a concern in the dataset. In other words, the independent variables are not highly correlated with each other, and each variable provides unique information to the model. Therefore, all predictors can be retained for further analysis without risk of inflated standard errors or instability in coefficient estimates.

In this regard, the factor loadings for each of the indicators were also calculated. Factor loading represents the correlation between an indicator and its underlying construct. The criterion for the appropriateness of factor coefficients is a loading value greater than 0.4, with statistical significance indicated by a t-value higher than 1.96 (see Figure 26 and Table 36).

TABLE 36. OUTER LOADING OF THE ITEMS

Measures		Behavioral finance		Finance literacy		EEs' success		PM2 methodology		Business environment	
		Loading factor	t-value	Loading factor	t-value	Loading factor	t-value	Loading factor	t-value	Loading factor	t-value
OPT	Optimism	,746	17,195								
OVC	Over-confidence	,779	21,795								
AVL	Availability	,803	25,593								
ANC	Anchoring	,812	25,593								
REP	Representativeness	,617	11,068								
MAC	Mental accounting	,826	9,501								
FRM	Framing	,767	6,852								
REG	Regret aversion	,840	8,926								
HRD	Herding behavior	,841	4,814								
MKI	Market information	,866	5,166								
PST	Past trends	,895	5,184								
CMP	Competency			,932	27,864						
PRF	Professionalism			,689	12,182						
OPT	Opportunity			,924	26,565						
PRM	Performance					,806	18,909				
STF	Satisfaction					,671	6,855				
SSB	Sustainability					,634	8,506				
ADP	Adaptation					,765	14,914				
SCE	Social effects					,612	9,515				
AGM	Agile management							,821	14,444		
PFM	Portfolio management							,838	13,300		
PGM	Program management							,786	5,991		
MIC	Micro-environment									,817	2,906
MAC	Macro-environment									,881	3,536
ECO	Ecological factors									,958	3,575

Note: Outer loadings > 0.4 indicate acceptable indicator reliability. T-values > 1.96 are considered statistically significant at the 0.05 level.

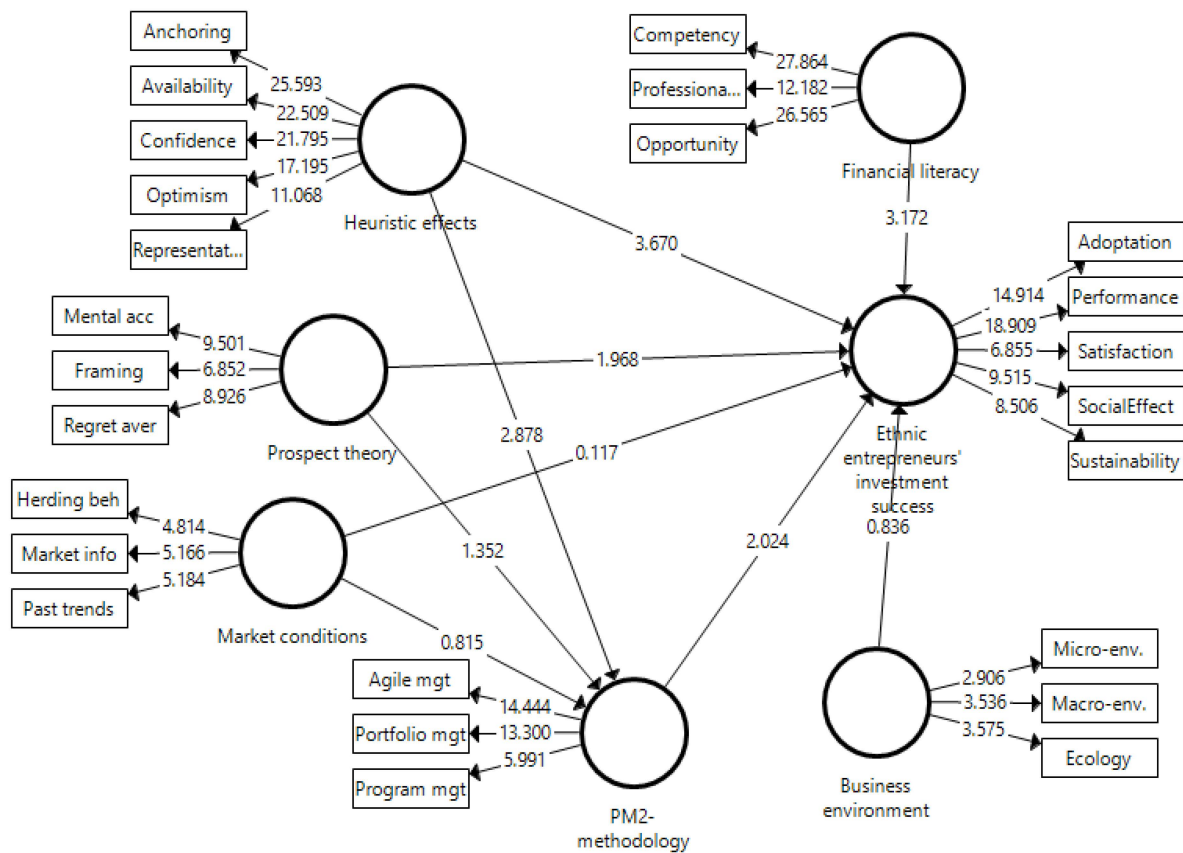


FIGURE 26. PATH ESTIMATION

Table 36 indicates that the factor loadings exceed the recommended threshold of 0.40 and are statistically significant ($t > 1.96$). This indicates that each observed variable contributes meaningfully to its respective latent construct, confirming that the indicators are appropriately aligned with their underlying factors. The magnitude and significance of these loadings provide strong evidence of convergent validity, suggesting that the items collectively capture the intended theoretical dimensions effectively.

5.2.1.5. Model fit assessment -

Before testing the hypotheses, it is also necessary to assess the fit of the model. Evaluating model fit ensures that the proposed structural model adequately represents the data and provides reliable results. To evaluate the overall fit of the proposed model, several fit indices were examined, including the Standardized Root Mean Square Residual (SRMR), the unweighted and geodesic distances (d_{ULS} and d_G), Chi-square, and the Normed Fit Index (NFI). (Table 37).

TABLE 37. MODEL FIT

	Saturated model	Estimated model
SRMR	0.085	0.085
d_ULS	2.340	2.368
d_G	1.204	1.205
Chi-square	995.519	996.177
NFI	0.719	0.718

Note: SRMR= Standardized Root Mean Square Residual, d_ULS= Unweighted Least Squares Discrepancy, d_G= Geodesic Distance Discrepancy, Chi-square = (χ^2), NFI= Normed Fit Index

The results indicate that the model demonstrates an acceptable fit. Specifically, the SRMR for both the saturated model and the estimated model is 0.085, which is below the commonly recommended threshold of 0.10, suggesting a reasonable approximation of the empirical covariance matrix. The d_ULS and d_G values for the estimated model were 2.368 and 1.205, respectively, closely matching the saturated model values (2.340 and 1.204), indicating minimal discrepancy between the observed and model-implied correlations. The Chi-square statistic was 996.177 for the estimated model, which is nearly identical to the saturated model value of 995.519, reflecting good model specification given the sample size. Finally, the NFI was 0.718 for the estimated model, slightly below the ideal benchmark of 0.90, but still acceptable in the context of complex models. Overall, these indices collectively suggest that the structural model provides a satisfactory fit to the observed data and is suitable for further hypothesis testing.

5.2.2. Path Coefficients and Hypotheses Testing

To examine the hypothesized relationships among the latent constructs, the structural model was assessed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. This technique is particularly suitable for complex models that include multiple mediators and hierarchical constructs, as in the present study. The evaluation of the structural model aims to determine the predictive power and significance of the hypothesized relationships by examining the path coefficients (β), coefficient of determination (R^2), effect sizes (f^2), and predictive relevance (Q^2).

Path coefficients represent the standardized relationships between latent variables and indicate the strength and direction of the hypothesized effects. To test their statistical significance,

a nonparametric bootstrapping procedure with 5,000 resamples was employed, generating standard errors, t-statistics, and confidence intervals for each path estimate. This procedure provides robust inferences without assuming normality of the data distribution (Hair et al., 2019). The results of this analysis determine whether the proposed hypotheses, linking behavioral finance and ethnic entrepreneurs' investment success considering PM2 methodology, financial literacy and business environment, are empirically supported.

5.2.2.1. Relationship between behavioral finance and EEs' investment success (H1)

The relationship between behavioral finance (BF) as an overall construct and the investment success of ethnic entrepreneurs (EEIS) was examined using PLS-SEM with bootstrapping (5,000 subsamples). Table 38 presents the standardized path coefficient, t-value, p-value, and hypothesis decision for the overall behavioral finance factor.

TABLE 38. PATH COEFFICIENTS AND HYPOTHESIS TESTING RESULTS FOR H1

Hypothesis	Path	β	t-value	P-value	Decision
H1	BF >>> EEs' investment success	-0.36	3,56	<0.001	Supported

Note: β represents the path coefficient, t-values assess significance of the paths, and P-values indicate the probability of observing the result under the null hypothesis. Paths are considered significant if $t > 1.96$ at the 0.05 level.

The results indicate that behavioral finance has a significant negative effect on EEs' investment success, with a standardized path coefficient of $\beta = -0.36$, $t = 3.56$, and $p < 0.001$. This finding confirms Hypothesis H1, demonstrating that higher levels of behavioral biases among ethnic entrepreneurs are associated with lower investment success. Behavioral finance factors influence investment outcomes primarily through their impact on decision-making processes. The observed negative relationship suggests that cognitive biases, heuristics, and prospect-theory tendencies lead to suboptimal investment decisions, which ultimately reduce the likelihood of achieving successful investment outcomes. Therefore, the significant negative effect of behavioral finance on EEs' investment success reflects the cumulative consequences of biased decision-making behaviors in the studied sample.

In this regard, hypothesis H1a proposed that the heuristics factor has a significant negative effect on ethnic entrepreneurs' investment success. The structural model analysis using PLS-SEM with bootstrapping (5,000 subsamples) showed that heuristics exert a negative and statistically significant effect on investment success, with a standardized path coefficient of $\beta = -0.299$, $t =$

3.698, and $p < 0.001$ (Table 39). This finding confirms H1a, indicating that greater reliance on heuristic-based decision-making reduces investment success among ethnic entrepreneurs.

TABLE 39. PATH COEFFICIENTS FOR HEURISTICS AND ITS COMPONENTS (H1A)

Hypothesis	Path	β	t-value	P-value	Decision
H1a	Heuristics >>> EEs' success	-0.299	3,698	<0.001	Supported
	optimism >>> EEs' success	-0.298	7,278	<0.001	Supported
	overconfidence >>> EEs' success	-0.408	16,713	<0.001	Supported
	availability >>> EEs' success	-0.030	0,890	0.370	N/A
	anchoring >>> EEs' success	-0.040	1,120	0.260	N/A
	representativeness >>> EEs' success	-0.205	2,050	<0.001	Supported

A detailed examination of the subcomponents of heuristics was conducted to identify which dimensions drive this effect. According to the results, optimism ($\beta = -0.298$, $t = 7.278$, $p < 0.05$), overconfidence ($\beta = -0.408$, $t = 16.713$, $p < 0.05$), and representativeness ($\beta = -0.205$, $t = 2.05$, $p < 0.05$) were found to have significant negative effects on EEs' investment success. While availability ($\beta = -0.03$, $t = 0.89$, $p = 0.37$) and anchoring ($\beta = -0.04$, $t = 1.12$, $p = 0.26$) were not statistically significant, indicating that these dimensions do not meaningfully influence EEs' investment outcomes in this sample.

The test of Hypothesis H1b indicates that the prospect theory factor has a significant negative effect on the investment success of ethnic entrepreneurs. The structural model analysis revealed that prospect theory exerts a statistically significant negative effect on investment success, with a standardized path coefficient of $\beta = -0.19$, $t = 2.057$, and $p < 0.04$. This finding supports H1b, demonstrating that higher levels of prospect-theory-related biases are associated with reduced investment success among ethnic entrepreneurs. Furthermore, the three subcomponents of prospect theory were examined to assess their individual contributions to investment success. The results are summarized in Table 40.

TABLE 40. PATH COEFFICIENTS FOR PROSPECT THEORY AND ITS COMPONENTS (H1B)

Hypothesis	Path	β	t-value	P-value	Decision
H1b	Prospect theory >>> EEs' success	-0.190	2,057	0.040	Supported
	mental accounting >>> EEs' success	-0.441	3,671	<0.001	Supported
	framing >>> EEs' success	-0.380	3,037	<0.001	Supported
	regret aversion >>> EEs' success	-0.393	3,128	<0.001	Supported

Based on the results, all three subcomponents of prospect theory exhibit a significant negative relationship with the investment success of ethnic entrepreneurs. Specifically, component 1 (mental accounting) has $\beta = -0.44$, $t = 3.67$, $p < 0.05$, component 2 (framing) has $\beta = -0.38$, $t = 3.03$, $p < 0.05$, and component 3 (regret aversion) has $\beta = -0.39$, $t = 3.128$, $p < 0.05$. These findings indicate that each subcomponent significantly contributes to the overall negative effect of prospect theory on the investment success of ethnic entrepreneurs.

Hypothesis H1c suggested that the market conditions factor has a significant effect on the investment success of ethnic entrepreneurs. Structural model analysis using PLS-SEM with bootstrap (5000 subsamples) showed that market conditions do not have a statistically significant effect on investment success, with a standardized path coefficient of $\beta = 0.068$, $t = 0.812$ and $p > 0.417$. Consequently, hypothesis H1c is not supported, indicating that changes in market conditions do not directly affect the investment performance of ethnic entrepreneurs in the study sample. More specifically, the subcomponents of market conditions were also examined. The results, summarized in Table 41, show that none of the subcomponents were statistically significant (all $p > 0.05$).

TABLE 41. PATH COEFFICIENTS FOR MARKET CONDITIONS AND ITS COMPONENTS (H1C)

Hypothesis	Path	β	t-value	P-value	Decision
H1c	Market conditions >>> EEs' success	0.068	0,812	0.417	N/A
	herding behavior >>> EEs' success	0.04	1,669	0.095	N/A
	market information >>> EEs' success	0.06	1,702	0.089	N/A
	past trends >>> EEs' success	0.07	1,611	0.107	N/A

Similarly, the three components of Market conditions, herding behavior ($\beta = 0.04$, $t = 1.669$, $p = 0.095$), market information ($\beta = 0.06$, $t = 1.702$, $p = 0.089$), and past trends ($\beta = 0.07$, $t = 1.611$, $p = 0.107$), were not significant predictors of investment outcomes. Thus, the analysis confirms that market conditions, as a sub-factor of behavioral finance, do not significantly affect the investment success of ethnic entrepreneurs. All subcomponents, herding behavior, market information and past trends, do not show significant effects. Therefore, external market factors appear not to play a decisive role in determining investment outcomes for ethnic entrepreneurs in the studied context.

5.2.2.2. Moderated-Mediation Role of PM²-Methodology (H2)

Hypothesis H2 proposed that PM², both, mediates and moderates the relationship between behavioral finance and the investment success of ethnic entrepreneurs. To test this hypothesis, a mediation analysis was conducted using PLS-SEM with bootstrapping (5,000 subsamples). This approach allows for the simultaneous estimation of both direct and indirect effects, providing a robust assessment of whether PM²-methodology acts as an intermediary mechanism through which behavioral finance influences investment outcomes. Table 42 indicates summary of the mediating effect of PM² on the relationship between behavioral finance and investment success of EEs.

TABLE 42. MEDIATING EFFECT OF PM² ON THE RELATIONSHIP BETWEEN BF AND EEIS

Hypothesis	Path	β	t-value	P-value	Decision
H2 (Mediating role)	BF >>> PM ² >>> EEs' success	0.263	2,210	0.027	Supported

The results indicate that the indirect effect of behavioral finance on investment success through PM² is positive and statistically significant, with a standardized path coefficient of $\beta = 0.263$, $t = 2.210$, and $p = 0.027$. This confirms that PM² partially mediates the relationship between behavioral finance and investment success. In other words, a portion of the influence of behavioral finance on ethnic entrepreneurs' investment outcomes occurs through its effect on PM², demonstrating that PM² functions as a key mechanism linking behavioral biases to investment performance. The analysis also shows that the direct effect of behavioral finance on investment success remains positive and statistically significant, indicating that PM² partially, but not fully, mediates the relationship. This suggests that behavioral finance affects investment outcomes both directly and indirectly via PM², highlighting the dual role of PM² as an explanatory factor in the decision-making process of ethnic entrepreneurs.

Also, hypothesis H2 proposed that PM² moderates the relationship between behavioral finance and the investment success of ethnic entrepreneurs. To test this hypothesis, a moderation analysis was conducted using the interaction term approach in PLS-SEM with bootstrapping (5,000 subsamples). This approach allows for the assessment of whether the strength or direction of the relationship between behavioral finance and EEs investment success changes depending on the level of PM². By including the interaction term ($BF \times PM^2$) in the model, the analysis provides a robust evaluation of the conditional effect of behavioral finance on investment outcomes,

highlighting the role of PM² as a potential boundary condition in the decision-making process of ethnic entrepreneurs (see Table 43).

TABLE 43. MODERATING EFFECT OF PM² ON THE RELATIONSHIP BETWEEN BF EEIS

Hypothesis	Path	β	t-value	P-value	Decision
H2 (Moderating role)	BF >>> PM ² >>> EEs' success	0.140	3,121	0.044	Supported

The results indicate that the interaction between behavioral finance and PM² is statistically significant, with a standardized path coefficient of $\beta = 0.14$, $t = 3.12$, and $p < 0.01$. This confirms H2, demonstrating that the strength of the relationship between behavioral finance and investment success depends on the level of PM². Specifically, higher levels of PM² attenuate the adverse effects of behavioral finance on investment performance, enabling ethnic entrepreneurs to better manage the influence of behavioral biases. Conversely, lower levels of PM² allow the negative impact of BF to manifest more strongly, highlighting the conditional nature of this relationship.

Following the examination of the moderated-mediation roles of PM² in the relationship between behavioral finance and the investment success of ethnic entrepreneurs, it is important to analyze the contribution of its three components: Agile, Portfolio, and Program Management. The results indicate that PM² as a whole functions as a moderated-mediation factor in this relationship, confirming Hypotheses H2. This demonstrates that PM² methodology significantly shapes the impact of behavioral finance on EEs investment success. Table 44 presents the roles of the individual PM² components in this context.

TABLE 44. MODERATED-MEDIATION EFFECTS OF PM² COMPONENTS IN THE LINK BETWEEN BF AND EES

Hypothesis	Path	β	t-value	P-value	Decision
H2a	BF >>> agile >>> EEs' success	0.120	2,351	0.021	Supported
H2b	BF >>> portfolio >>> EEs' success	0.05	1,280	0,201	N/A
H2c	BF >>> program >>> EEs' success	0.101	2,122	0,034	Supported

The analysis of the individual components of PM² methodology reveals their differential contributions to the moderated-mediation relationship between behavioral finance and EEs' investment success. Result of Hypothesis H2a exhibits a significant moderated-mediation effect ($\beta = 0.12$, $t = 2.35$, $p = 0.021$), indicating that ethnic entrepreneurs who adopt agile practices are better able to mitigate the negative effects of behavioral biases while leveraging PM² processes to

enhance investment outcomes. In addition, Hypothesis H2c also demonstrates a significant moderated-mediation effect ($\beta = 0.10$, $t = 2.12$, $p = 0.034$), suggesting that structured program-level management practices help channel the influence of behavioral finance in a way that supports successful investment decisions. On contrary, Hypothesis H2b does not show a significant effect ($\beta = 0.05$, $t = 1.28$, $p = 0.201$) in the moderated-mediation model, indicating that portfolio-level practices alone are insufficient to influence the relationship between behavioral finance and investment success in the studied sample.

5.2.2.3. Moderated Role of Financial Literacy (H3)

Hypothesis H3 examined whether financial literacy moderates the relationship between behavioral finance and the investment success of ethnic entrepreneurs. The moderation analysis was conducted using the interaction term approach in PLS-SEM, with bootstrapping (5,000 subsamples) to test the significance of the interaction effects. Financial literacy was conceptualized as a multidimensional construct encompassing three components, competency, professionalism, and opportunity, each representing a distinct dimension of financial understanding and decision-making ability. It was hypothesized that higher levels of financial literacy would help ethnic entrepreneurs better interpret financial information, manage risk, and reduce the negative influence of behavioral biases on their investment performance.

The results of the moderation analysis for both the overall construct and its three subcomponents are presented in Table 45.

TABLE 45. MODERATING EFFECT OF FINANCIAL LITERACY ON THE LIKE BETWEEN BF AND EEIS

Hypothesis	Path	β	t-value	P-value	Decision
H3	BF >>> Financial literacy >>> EEs' success	0.258	3,117	0.002	Supported
H3a	BF >>> Competency >>> EEs' success	0,211	2,864	0,004	Supported
H3b	BF >>> Professionality >>> EEs' success	0,235	2,972	0,003	Supported
H3c	BF >>> Opportunity >>> EEs' success	0,198	2,746	0,006	Supported

As shown in Table 45, the results indicate that financial literacy significantly moderates the relationship between behavioral finance and the investment success of ethnic entrepreneurs ($\beta = 0.258$, $t = 3.117$, $p = 0.002$). This finding confirms Hypothesis H3 and demonstrates that financial literacy serves as a buffering mechanism that reduces the negative impact of behavioral biases on investment outcomes. That means, ethnic entrepreneurs with higher levels of financial literacy are

better equipped to analyze investment risks, interpret financial information accurately, and apply rational decision-making strategies. In contrast, those with lower financial literacy are more prone to emotional and cognitive biases, such as overconfidence, loss aversion, and reliance on heuristics, which can lead to suboptimal investment outcomes.

On the other hand, the analysis of the three components of financial literacy provides further insights into this moderating role. Test of H3a demonstrates a significant moderating effect ($\beta = 0.211$, $t = 2.864$, $p = 0.004$), suggesting that entrepreneurs with stronger fundamental financial skills, knowledge and competency are more capable of making informed investment decisions, thereby mitigating the adverse effects of behavioral biases. In addition, test of H2b also shows a significant moderating influence ($\beta = 0.235$, $t = 2.972$, $p = 0.003$), indicating that disciplined, ethical, and methodical financial behavior enhances the ability to resist impulsive or bias-driven decisions. This component reinforces the stabilizing effect of professional conduct in financial decision-making contexts. Ultimately, test of H3c representing access to financial resources, instruments, and learning opportunities, is likewise significant ($\beta = 0.198$, $t = 2.746$, $p = 0.006$). This finding implies that greater financial exposure and access to financial tools empower entrepreneurs to counteract bias-driven behaviors and improve investment success.

Overall, these findings confirm that all three subcomponents of financial literacy significantly contribute to moderating the relationship between behavioral finance and EEs' investment success. Therefore, Hypotheses H3, H3a, H3b, and H3c are all supported, demonstrating that financial literacy, especially when conceptualized as a combination of competency, professionalism, and opportunity, acts as a crucial resilience factor enabling ethnic entrepreneurs to navigate behavioral biases effectively and achieve superior investment outcomes.

5.2.2.4. Moderated Role of Business Environment (H4)

Hypothesis H4 proposed that the business environment moderates the relationship between behavioral finance and the investment success of ethnic entrepreneurs. This analysis aimed to determine whether variations in external business conditions affect the extent to which behavioral biases influence investment performance. The moderation test was performed using the interaction term approach in PLS-SEM, with bootstrapping (5,000 subsamples) to assess the statistical significance of the interaction effects. The business environment was modeled as a three-dimensional construct encompassing micro-economic factors, macro-economic factors, and

ecological factors. Each dimension was examined separately to identify its unique moderating contribution to the overall relationship. The results of the moderation analysis are presented in Table 46 below.

TABLE 46. MODERATING EFFECTS OF BE AND ITS COMPONENTS ON THE LINK BETWEEN BF AND EEIS

Hypothesis	Path	β	t-value	P-value	Decision
H4	BF >>> Business environment >>> EEs' success	-0,061	0,807	0,419	N/A
H4a	BF >>> Micro-economics >>> EEs' success	-0,048	0,774	0,439	N/A
H4b	BF >>> Macro-economics >>> EEs' success	-0,057	0,821	0,412	N/A
H4c	BF >>> Ecological factors >>> EEs' success	0,126	2,264	0,023	Supported

As presented in Table 46, the overall moderating effect of the business environment on the relationship between behavioral finance and investment success is not statistically significant ($\beta = -0.061$, $t = 0.807$, $p = 0.419$). This indicates that, in general, variations in the external business environment do not substantially alter how behavioral biases influence the investment outcomes of ethnic entrepreneurs. Consequently, Hypothesis H4 is not supported.

However, when analyzing the individual components of the business environment, a more nuanced pattern emerges. Both microeconomic (H4a) and macroeconomic (H4b) factors show no significant moderating effects, suggesting that fluctuations in market competition, demand, inflation, or economic policy do not meaningfully influence the strength of the relationship between behavioral finance and investment success. This may be attributed to the relatively stable or predictable economic conditions within the study context, or to the entrepreneurs' limited responsiveness to macro-level shifts. In contrast, the ecological factors dimension (H4c) demonstrates a significant moderating effect ($\beta = 0.126$, $t = 2.284$, $p = 0.023$). This finding indicates that environmentally oriented business practices and sustainability awareness can moderate the impact of behavioral biases on investment success. In other words, entrepreneurs who operate within or adapt to ecologically responsible business environments tend to attenuate the negative effects of behavioral finance tendencies and achieve better investment outcomes.

Overall, these findings reveal that while the business environment as a whole does not strongly moderate the relationship between behavioral finance and investment success, ecological and sustainability-related aspects of the business environment play a significant role. Therefore, H4a and H4b are rejected, whereas H4c is supported. This underscores the growing importance of

environmental awareness and sustainability orientation in strengthening decision-making resilience against behavioral biases among ethnic entrepreneurs.

5.2.2.5. Effects of Demographic Characteristics on the Study Variables

Demographic characteristics were examined as control variables to identify whether individual differences among ethnic entrepreneurs influence behavioral finance tendencies, the use of PM² methodology, and EEs' investment success. Understanding these variations provides additional insight into how personal and contextual factors shape entrepreneurial behavior and decision-making processes.

TABLE 47. MEAN AND STANDARD DEVIATION OF MAIN VARIABLES BY DEMOGRAPHIC CHARACTERISTICS

Demographic Variable	Category	N	BF (Mean ± SD)	PM ² (Mean ± SD)	EEs (Mean ± SD)	Significant Differences
Gender	Male	101	3.56 ± 0.72	3.76 ± 0.63	3.75 ± 0.60	X (p > 0.05)
	Female	80	3.58 ± 0.71	3.77 ± 0.62	3.73 ± 0.62	
Age	21–30	10	3.61 ± 0.70	3.75 ± 0.66	3.74 ± 0.60	X (p > 0.05)
	31–40	34	3.59 ± 0.73	3.77 ± 0.63	3.79 ± 0.62	
	41–50	65	3.57 ± 0.69	3.80 ± 0.67	3.76 ± 0.64	
	≥ 51	67	3.55 ± 0.68	3.81 ± 0.65	3.78 ± 0.63	
Education	High school or less	10	3.85 ± 0.68	3.59 ± 0.60	3.55 ± 0.57	X (p > 0.05)
	Collage	84	3.70 ± 0.70	3.73 ± 0.61	3.70 ± 0.58	
	Bachelor's degree	62	3.62 ± 0.70	3.77 ± 0.62	3.78 ± 0.59	
	Master's or above	25	3.41 ± 0.71	3.89 ± 0.63	3.91 ± 0.58	
Language Fluency	Elementary	83	3.74 ± 0.69	3.61 ± 0.62	3.60 ± 0.58	✓ (p ≤ 0.05)
	Pre-intermediate	17	3.70 ± 0.72	3.67 ± 0.61	3.64 ± 0.60	
	Intermediate	25	3.60 ± 0.71	3.75 ± 0.63	3.76 ± 0.61	
	Upper-intermediate	32	3.50 ± 0.70	3.83 ± 0.64	3.83 ± 0.59	
	Advanced	20	3.41 ± 0.72	3.89 ± 0.63	3.90 ± 0.57	
Residency Status	Permanent residents	137	3.53 ± 0.70	3.83 ± 0.64	3.83 ± 0.59	X (p > 0.05)
	Temporary/Non-residents	45	3.71 ± 0.75	3.67 ± 0.66	3.61 ± 0.61	

The demographic variables analyzed include gender, age, education level, language fluency (French and English), and residency status. These characteristics were selected based on their potential theoretical and practical relevance to financial behavior and managerial decision-making. Table 47 presents the mean and standard deviation values for the main variables, Behavioral Finance, PM² Methodology, and Ethnic Entrepreneurial Investment Success, across demographic groups. Independent sample t-tests and one-way ANOVA were used to test for significant mean differences.

The analysis revealed no statistically significant differences across gender in behavioral finance tendencies, PM² methodology usage, or ethnic entrepreneurs' investment success (p >

0.05). Although minor variations in mean scores were observed, for example, females showed slightly higher behavioral finance scores than males, and males reported marginally higher investment outcomes, these differences were not statistically meaningful. This indicates that gender does not play a determining role in shaping behavioral biases, project management practices, or investment performance among the surveyed entrepreneurs. Similarly, age did not differentiate participants in any of the key study variables ($p > 0.05$). Across all age groups, entrepreneurs demonstrated comparable levels of behavioral finance tendencies, PM² methodology engagement, and investment success. This finding suggests that behavioral decision-making patterns, project management practices, and investment outcomes remain relatively stable across different stages of adulthood among ethnic entrepreneurs.

Education also showed no significant effect on behavioral finance, PM² methodology usage, or investment success ($p > 0.05$). While slight differences appeared in mean values across education levels, these were not large enough to indicate meaningful group differences. Therefore, educational attainment does not substantially influence susceptibility to behavioral biases or the adoption of structured project management approaches in this sample. However, French and English fluency were found to significantly affect the study variables. Participants with higher proficiency in either language showed lower susceptibility to behavioral biases and higher levels of investment success and PM² utilization. This suggests that language fluency facilitates better access to financial knowledge, information processing, and participation in broader business networks, enabling entrepreneurs to make better-informed, less biased decisions.

Finally, residency status showed no significant group differences for behavioral finance, PM² methodology use, or investment success ($p > 0.05$). Although permanent residents and temporary/non-residents showed slight numerical differences in mean scores, these differences were not statistically supported. This indicates that residency status is not a major factor influencing cognitive biases or investment outcomes among the surveyed entrepreneurs.

5.2.3. Summary of chapter 5

This chapter presented the comprehensive analysis of the data collected from ethnic entrepreneurs, combining both qualitative and quantitative strands to provide a holistic understanding of the factors influencing investment success. The qualitative findings highlighted

the critical role of social, familial, and community networks, as well as individual characteristics, human capital, transnational connections, and training in shaping entrepreneurial behavior. Family support, customer satisfaction, and ethnic ties emerged as the most frequently cited influences, while other factors, such as intermediary roles, adaptation strategies, and engagement with broader communities, also contributed significantly to the entrepreneurial experience. These insights provided rich contextual understanding and informed the development of the conceptual framework tested in the quantitative phase.

The quantitative analysis, conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) with bootstrapping, validated many of the relationships identified qualitatively. Behavioral finance biases, particularly heuristics and prospect theory factors, were found to negatively impact investment success, demonstrating the influence of cognitive and emotional tendencies on entrepreneurial decision-making. Market conditions, in contrast, did not exhibit a significant effect.

The mediating and moderating role of PM² methodology was supported, indicating that structured project management practices can both mediate the negative influence of behavioral biases and buffer their effects. Agile and program management were particularly effective in enhancing investment outcomes, while portfolio management did not demonstrate a significant impact. Similarly, financial literacy strengthened this protective effect, with higher levels of competency, professionalism, and opportunity awareness mitigating the adverse consequences of behavioral biases.

While the broader business environment did not moderate the relationship between behavioral finance and investment success overall, ecological factors showed a meaningful moderating effect, suggesting that environmental sustainability considerations play a role in entrepreneurial decision-making. Demographic variables, including gender, age, education, and residency status, did not influence the outcomes, however, proficiency in English and French showed a significant effect.

Overall, the chapter demonstrates the interconnectedness of behavioral, managerial, and contextual factors in shaping investment success among ethnic entrepreneurs. By combining qualitative and quantitative evidence, the study provides a nuanced understanding of how cognitive biases, project management practices, financial literacy, and environmental conditions interact to

influence entrepreneurial performance. These findings not only validate the conceptual model but also offer practical insights for supporting ethnic entrepreneurs in optimizing their investment decisions and achieving sustainable business success.

5.2.4. Résumé du Chapitre 5

Ce chapitre a présenté l'analyse complète des données recueillies auprès des entrepreneurs issus de minorités ethniques, combinant à la fois les volets qualitatif et quantitatif afin de fournir une compréhension globale des facteurs influençant le succès des investissements. Les résultats qualitatifs ont mis en évidence le rôle crucial des réseaux sociaux, familiaux et communautaires, ainsi que des caractéristiques individuelles, du capital humain, des liens transnationaux et de la formation dans le façonnement du comportement entrepreneurial. Le soutien familial, la satisfaction des clients et les liens ethniques se sont révélés comme les influences les plus fréquemment citées, tandis que d'autres facteurs, tels que les rôles d'intermédiaire, les stratégies d'adaptation et l'engagement avec les communautés plus larges, ont également contribué de manière significative à l'expérience entrepreneuriale. Ces observations ont fourni une compréhension contextuelle approfondie et ont servi à élaborer le cadre conceptuel testé dans la phase quantitative.

L'analyse quantitative, réalisée à l'aide de la méthode PLS-SEM (Partial Least Squares Structural Equation Modeling) avec bootstrapping, a validé de nombreuses relations identifiées qualitativement. Les biais de finance comportementale, en particulier les heuristiques et les facteurs de la théorie des perspectives, ont été trouvés comme ayant un impact négatif sur le succès des investissements, démontrant l'influence des tendances cognitives et émotionnelles sur la prise de décision entrepreneuriale. En revanche, les conditions de marché n'ont pas montré d'effet significatif.

Le rôle médiateur et modérateur de la méthodologie PM² a été confirmé, indiquant que les pratiques structurées de gestion de projet peuvent à la fois atténuer l'effet négatif des biais comportementaux et renforcer les résultats des investissements. La gestion agile et la gestion de programme se sont révélées particulièrement efficaces pour améliorer les résultats, tandis que la gestion de portefeuille n'a pas montré d'impact significatif. De même, la littératie financière a

renforcé cet effet protecteur, les niveaux plus élevés de compétence, de professionnalisme et de sens de l'opportunité atténuant les conséquences négatives des biais comportementaux.

Bien que l'environnement économique global n'ait pas modéré la relation entre la finance comportementale et le succès des investissements dans son ensemble, les facteurs écologiques ont montré un effet modérateur significatif, suggérant que les considérations de durabilité environnementale influencent les décisions entrepreneuriales. Les variables démographiques, notamment le genre, l'âge, le niveau d'éducation et le statut de résidence, n'ont pas influencé les résultats; cependant, la maîtrise de l'anglais et du français a montré un effet significatif.

Dans l'ensemble, ce chapitre démontre l'interconnexion des facteurs comportementaux, managériaux et contextuels dans la réussite des investissements des entrepreneurs ethniques. En combinant des preuves qualitatives et quantitatives, l'étude offre une compréhension nuancée de la manière dont les biais cognitifs, les pratiques de gestion de projet, la littératie financière et les conditions environnementales interagissent pour influencer la performance entrepreneuriale. Ces résultats confirment le cadre conceptuel et fournissent des indications pratiques pour soutenir les entrepreneurs ethniques dans l'optimisation de leurs décisions d'investissement et l'atteinte d'un succès entrepreneurial durable.

CHAPTER 6: DISCUSSION

This chapter interprets and synthesizes the empirical results presented in Chapter 5. The objective is to situate the study's findings within the relevant theoretical frameworks, to explain their substantive meaning, and to draw out the implications for theory, practice, and policy. The analysis adopts an integrative approach: quantitative results from the PLS-SEM analyses are interpreted in light of qualitative evidence gathered through semi-structured interviews, enabling triangulation and richer contextualization of the observed effects.

The investigation focused on the effect of behavioral finance (BF) on the investment success of ethnic entrepreneurs (EEs), and on the mechanisms and boundary conditions that shape this relationship. In particular, the study examined the role of PM² methodology (as both mediator and moderator), the moderating influence of financial literacy and business environment, and the potential confounding effects of key demographic characteristics (gender, age, education, language fluency, and residency status). Chapter 5 established that BF exerts a statistically significant negative effect on investment success, that PM² operates as a moderated-mediation mechanism, that financial literacy attenuates BF's adverse effects, and that ecological aspects of the business environment (but not micro/macro economic factors) moderate the BF–investment success link. It also presented component-level findings for heuristics, prospect theory, PM², financial literacy, and business environment, and reported differences across demographic groups.

In this chapter, each principal empirical result is examined in turn. Section 6.1 discusses the primary direct relationships (BF and its subfactors) and their implications for decision-making theory. Section 6.2 addresses PM²'s dual role as mediator and moderator, with a focused component-level discussion. Section 6.3 interprets the moderating roles of financial literacy and business environment. Section 6.4 considers demographic influences as control variables and their implications for both external validity and targeted interventions. Section 6.5 integrates the quantitative and qualitative findings, highlighting convergences and divergences between statistical patterns and participants lived experiences. The chapter closes with a brief summary (Section 6.6 and section 6.7) that positions the findings for the concluding chapter.

The discussion aims not merely to restate statistical outcomes but to interpret how and why these patterns emerged, to relate them to extant literature on behavioral finance and project

management methodologies, and to identify realistic steps stakeholders can take to improve investment outcomes among ethnic entrepreneurs.

6.1. Behavioral Finance and Investment Success (H1)

The statistical results confirm that Behavioral Finance (BF) exerts a significant and negative effect on the investment success of ethnic entrepreneurs ($\beta = -0.36$, $t = 3.56$, $p < 0.001$), thus supporting Hypothesis H1. This finding indicates that the more ethnic entrepreneurs are influenced by behavioral biases, the lower their levels of performance, satisfaction, sustainability, adaptation, and social contribution in their ventures. In other words, behavioral distortions directly reduce both the economic and social dimensions of entrepreneurial success.

This outcome aligns conceptually with behavioral finance theory, which posits that cognitive and emotional distortions, such as heuristics, overconfidence, and loss aversion, interfere with rational decision-making, leading to systematic judgment errors and suboptimal investment outcomes (Kahneman & Tversky, 1979; Simon, 1957; Shefrin & Statman, 1985). Entrepreneurs operating under uncertainty are particularly vulnerable to these biases, as limited information, time pressures, and resource constraints amplify reliance on intuitive judgments rather than analytical reasoning. Consequently, the observed negative relationship between BF and investment success is not only statistically significant but also theoretically coherent with findings in the entrepreneurship literature, which consistently show that cognitive and emotional biases in small-business contexts reduce performance, hinder adaptability, and compromise long-term sustainability (Busenitz & Barney, 1997; Mitchell et al., 2002).

In entrepreneurial settings, especially among ethnic entrepreneurs, decision-making tends to occur under uncertainty, information asymmetry, and resource constraints. Entrepreneurs often lack consistent access to formal financial advisory services, structured market intelligence, or reliable data sources. Such circumstances naturally push decision-makers toward intuitive, experience-based, and emotionally charged reasoning patterns. Consequently, investment decisions regarding capital allocation, project selection, and risk evaluation are often shaped more by perceptions, past experiences, or community norms than by analytical models or empirical evidence. These tendencies help explain the observed negative linkage between behavioral finance and investment success: when intuition overrides structured analysis, entrepreneurs are more likely

to misjudge risk, misallocate resources, and pursue unrealistic opportunities, all of which ultimately reduce profitability, satisfaction, and business sustainability.

The relationship becomes even clearer when examining the three components of behavioral finance, heuristics, prospect theory, and market conditions, each of which contributes differently to the overall effect.

6.1.1. Heuristics and EEs' Investment Success (H1a)

The heuristics component ($\beta = -0.299$, $t = 3.698$, $p < 0.001$) demonstrated a strong and negative effect on investment success, indicating that ethnic entrepreneurs who rely heavily on mental shortcuts and intuitive judgments tend to achieve lower levels of performance, satisfaction, sustainability, and social impact in their businesses. This finding underscores that in uncertain and resource-constrained environments, heuristics, while cognitively efficient, can systematically distort decision-making, leading to over-optimistic projections, misallocation of capital, and suboptimal risk assessment (Kahneman & Tversky, 1974; Simon, 1957; Busenitz & Barney, 1997).

In this study, heuristics were operationalized through five subcomponents: optimism, overconfidence, availability, anchoring, and representativeness. Among these, optimism, overconfidence, and representativeness had statistically significant negative effects on investment outcomes, while availability and anchoring did not. This pattern indicates that certain heuristics, particularly those tied to self-perception and social judgment, exert strong influence on entrepreneurial decision-making, whereas others related to information recall or initial reference points may play a more context-specific or negligible role (Gigerenzer & Todd, 1999; Mitchell et al., 2002).

Optimism and overconfidence, for example, can lead entrepreneurs to overestimate potential returns and underestimate risks, resulting in overextension and reduced business adaptability. Similarly, representativeness bias causes entrepreneurs to imitate strategies of perceived successful peers without adequate consideration of their own resources or market context, leading to strategic misalignment and diminished sustainability. Conversely, availability and anchoring biases may be less pronounced in small, tightly networked ethnic entrepreneurial communities, where information circulates rapidly and initial benchmarks are quickly adjusted.

Taken together, these findings highlight that heuristics are a critical cognitive mechanism through which behavioral finance exerts a negative impact on investment success. They also provide nuanced insight into which specific mental shortcuts are most consequential in shaping decision-making under uncertainty, offering a theoretically grounded explanation for the observed pattern of results.

6.1.1.1. Optimism and EEs' Investment Success

Optimism bias emerged as a significant negative predictor of investment success. Entrepreneurs with higher levels of optimism tended to pursue ambitious projects without conducting thorough feasibility analyses or contingency planning. This bias led them to overestimate expected returns while underestimating potential risks (Kahneman & Tversky, 1979; Simon, 1957). In the present sample, these tendencies manifested in lower overall performance, as financial and human resources were often misallocated, and ventures were less able to adapt to unexpected challenges.

Excessive optimism also affected subjective outcomes: entrepreneurs reported lower satisfaction when actual results fell short of expectations, highlighting the psychological cost of biased forecasting. From a behavioral perspective, optimism can distort opportunity evaluation by reinforcing overconfidence and selective attention to positive information, especially under conditions of uncertainty (Busenitz & Barney, 1997). This can reduce the use of analytical or evidence-based decision strategies, increasing vulnerability to environmental shocks.

For ethnic entrepreneurs, optimism bias may interact with contextual and social factors, such as limited access to formal support networks or financial resources, amplifying the negative effects on venture sustainability and growth. Prior research has similarly demonstrated that unrealistic optimism can lead to underestimation of operational and market risks, constraining venture performance and long-term development (Hayward, Shepherd, & Griffin, 2006). These findings suggest that while optimism can motivate entrepreneurial initiative, without structured planning and realistic risk assessment, it can undermine both economic and psychological outcomes.

6.1.1.2. Overconfidence and EEs' Investment Success

Overconfidence emerged as a significant negative predictor of investment success. Entrepreneurs exhibiting high levels of overconfidence tended to overestimate their knowledge,

predictive ability, and control over external factors. This led them to discount external advice, under-diversify their investments, and engage in excessive risk-taking. In the present sample, these behaviors primarily affected venture performance and sustainability, as enterprises became highly vulnerable to market fluctuations and operational uncertainties.

Overconfidence also had psychological consequences, reducing satisfaction when ventures underperformed and undermining perceived competence. Behaviorally, overconfidence amplifies optimism bias and can create cascades of poor decisions, as entrepreneurs become less likely to seek corrective information or reassess initial judgments. This pattern aligns with prior findings in both investment and entrepreneurship research: overconfident investors engage in excessive trading with suboptimal returns (Barber & Odean, 2001), and overconfident entrepreneurs are prone to underestimating risks and overvaluing opportunities (Hayward, Shepherd, & Griffin, 2006; Busenitz & Barney, 1997).

For ethnic entrepreneurs, overconfidence may be further compounded by contextual constraints, such as limited access to mentorship, market intelligence, or formal support systems. Without structured decision frameworks, overconfidence can exacerbate misallocation of resources, threaten venture resilience, and impede long-term growth. These findings underscore the need for mechanisms, such as PM² methodology, that promote evidence-based planning, critical evaluation, and adaptive decision-making to counteract the negative effects of overconfidence while preserving entrepreneurial initiative.

6.1.1.3. Representativeness and EEs' Investment Success

Representativeness bias negatively influenced investment outcomes. Entrepreneurs exhibiting this bias tended to imitate strategies and behaviors of perceived successful peers without adequately tailoring them to their own resources, capabilities, or local market conditions. This pattern adversely affected multiple dimensions of venture performance. Performance declined because copied strategies were often misaligned with the entrepreneur's context, adaptation was limited as these strategies were not adjusted to evolving conditions, and sustainability suffered as ventures lacked resilience to environmental shocks. Social outcomes were also weakened, since community-level benefits often depend on ventures successfully adapting and creating context-specific value.

From a behavioral perspective, representativeness reduces decision quality by overemphasizing superficial similarities while neglecting critical contextual differences (Tversky & Kahneman, 1974). Entrepreneurs relying on heuristics of similarity may ignore empirical evidence or structured analysis, leading to repeated errors in opportunity evaluation. In the ethnic entrepreneurship context, this bias can be particularly harmful: limited access to market intelligence or mentorship may exacerbate the tendency to mimic others, reducing the potential for venture-specific competitive advantage. Consistent with prior research, imitation without adaptation can undermine the unique positioning and growth of ventures (Alvarez & Barney, 2007).

These findings suggest that structured methodologies, such as PM², could help counteract representativeness bias by promoting systematic assessment of opportunities, resource alignment, and iterative adaptation, ensuring that entrepreneurial strategies are customized to the venture's actual conditions rather than superficial comparisons.

6.1.1.4. Availability and EEs' Investment Success

Availability bias did not show a statistically significant effect on investment success in this study. While entrepreneurs occasionally relied on readily accessible information or salient recent events, this tendency did not consistently distort investment decisions in the present context. One possible explanation is the structure of ethnic entrepreneurial communities, which are often small, closely connected, and characterized by frequent information sharing. In such networks, knowledge circulates rapidly, reducing the risk of selective recall or overreliance on memorable events.

Behaviorally, availability bias tends to influence decision-making when entrepreneurs overweight recent or vivid experiences relative to broader evidence (Tversky & Kahneman, 1974). However, in tightly knit communities where peer advice, market observations, and shared experiences are accessible, salient events may better reflect actual opportunities or risks rather than misleading heuristics. This aligns with Gigerenzer et al., (2000) perspective that the impact of availability heuristics is contingent on environmental structure: in interconnected, information-rich contexts, reliance on easily recalled data may be less distorting.

For ethnic entrepreneurs, this suggests that network density and information transparency can act as natural buffers against cognitive biases such as availability. While availability bias may

still influence perception of extreme or novel events, its practical effect on investment allocation, sustainability, and adaptation appears limited in contexts where community knowledge is readily accessible. Nevertheless, structured decision frameworks, like PM², could further safeguard against occasional overreliance on salient information by encouraging systematic analysis, documentation, and evidence-based evaluation of opportunities, ensuring that investment decisions are both rational and resilient.

6.1.1.5. Anchoring and EEs' Investment Success

Anchoring bias did not emerge as a significant predictor of investment success in this study. Although anchoring can influence decisions by causing entrepreneurs to fixate on initial benchmarks, reference values, or first-received information, the ethnic entrepreneurs in this sample appeared capable of adjusting these initial anchors based on subsequent information and experience. This flexibility may stem from hands-on experience, iterative learning, or the rapid feedback cycles typical of small ventures, which allow for continual reassessment of assumptions and reference points.

Behaviorally, anchoring tends to distort judgment when early information is overweighted relative to new evidence (Tversky & Kahneman, 1974). However, in the present context, such distortions were mitigated by the dynamic, networked environment of ethnic entrepreneurship, where peer input, market signals, and experiential learning provide natural corrective mechanisms. As a result, anchoring did not significantly affect performance, sustainability, adaptability, or satisfaction outcomes.

These findings highlight that the influence of cognitive biases like anchoring is highly context dependent. Small-scale, closely connected entrepreneurial networks can reduce reliance on initial information, and experience-based learning further allows entrepreneurs to recalibrate judgments. Nevertheless, structured decision-making tools such as PM² methodology could enhance this adaptive capacity by formalizing the review of initial assumptions, benchmarking, and decision checkpoints, ensuring that any inadvertent anchoring effects are systematically corrected and do not compromise investment quality or venture resilience.

In conclusion, the analysis of heuristics and their five components underscore the nuanced and context-dependent ways in which cognitive shortcuts shape entrepreneurial investment behavior. While heuristics enable rapid decision-making under uncertainty, their overapplication can distort opportunity evaluation, risk assessment, and resource allocation. Among the biases examined, optimism and overconfidence proved most detrimental, leading entrepreneurs to overestimate expected returns, underestimate potential risks, and pursue ambitious projects without adequate planning or contingency measures, ultimately reducing performance, sustainability, and satisfaction. Representativeness bias further compounded these effects by encouraging imitation of perceived successful peers without adaptation to the entrepreneur's own resources or market conditions, limiting venture-specific advantages and resilience. In contrast, availability and anchoring biases exhibited limited impact, suggesting that the structural characteristics of ethnic entrepreneurial networks, such as dense connections, shared knowledge, and rapid feedback cycles, can naturally buffer against certain heuristic-driven distortions.

These findings highlight that heuristics are neither inherently negative nor uniformly influential; their effects depend on both the behavioral tendencies of the entrepreneur and the contextual environment. Importantly, the results point to the critical role of methodological and structural safeguards in channeling heuristics toward positive outcomes. By providing systematic analysis, adaptive planning, and evidence-based decision processes, structured frameworks can transform intuitive judgments into disciplined, rational strategies. Building on these insights, the next section investigates the mediating role of PM² methodology, examining how its application can translate behavioral tendencies into more effective investment outcomes and mitigate the most harmful impacts of optimism, overconfidence, and uncritical imitation. This transition underscores the importance of understanding not only which heuristics influence decision-making but also how targeted management practices can modulate their effects to enhance entrepreneurial performance and sustainability.

6.1.2. Prospect Theory and Investment Success (H1b)

The analysis revealed that Prospect Theory exerts a significant negative effect on the investment success of ethnic entrepreneurs ($\beta = -0.190$, $t = 2.057$, $p = 0.04$), supporting Hypothesis H1b. This indicates that entrepreneurs influenced by the cognitive patterns described in prospect theory tend to experience lower performance, reduced sustainability, limited adaptability,

diminished satisfaction, and weaker social outcomes in their ventures. In other words, behavioral tendencies related to the evaluation of gains and losses systematically shape decision-making in ways that reduce overall investment success.

The negative relationship can be interpreted through the lens of prospect theory, which posits that individuals evaluate potential outcomes relative to a reference point, overweight losses compared to gains and often distort probabilities when assessing risks (Kahneman & Tversky, 1979; Tversky & Kahneman, 1991). In the context of ethnic entrepreneurship, decision-making frequently occurs under uncertainty, with limited access to formal financial advisory services, reliable data, and institutional support. These conditions amplify the impact of regret, loss aversion, and subjective framing, as entrepreneurs rely heavily on personal judgment and prior experience to guide investments. Consequently, opportunities may be either excessively avoided or pursued under misperceived probabilities, leading to suboptimal allocation of resources and diminished venture outcomes (Gneezy, List, & Wu, 2006; Hsu, 2007).

Moreover, prospect theory helps explain why even experienced entrepreneurs may repeatedly make decisions that are inconsistent with classical expected utility theory. The psychological weight given to potential losses can prompt overly conservative strategies, reducing business growth and limiting the pursuit of profitable but riskier investments. Similarly, the way entrepreneurs mentally frame gains and losses influences the perceived attractiveness of opportunities and shapes risk-taking behavior, affecting performance and satisfaction. Collectively, the effect of prospect theory captures the subtle yet systematic distortions in judgment and choice that compromise investment success.

Overall, these findings demonstrate that prospect theory provides a robust explanatory framework for understanding negative deviations in investment outcomes among ethnic entrepreneurs. It highlights that cognitive biases related to loss aversion, regret, and framing, not just resource constraints or market conditions, can play a decisive role in shaping entrepreneurial performance, sustainability, and social impact.

6.1.2.1. Regret and Loss Aversion and EEs' Investment Success

Regret and loss aversion were found to significantly reduce the investment success of ethnic entrepreneurs ($\beta = -0.39$, $t = 3.128$, $p < 0.05$). Entrepreneurs exhibiting strong sensitivity to potential losses frequently delayed or avoided investment decisions, even when opportunities

offered positive expected returns. This conservative behavior constrained their ability to innovate, diversify, and respond flexibly to market opportunities, resulting in lower business performance, limited adaptability, reduced sustainability, and decreased satisfaction.

These results reinforce the principles of Prospect Theory (Kahneman & Tversky, 1979), according to which individuals perceive losses more acutely than equivalent gains. In this study, ethnic entrepreneurs appeared particularly prone to this pattern, often describing past failures as emotionally and socially costly. Regret aversion amplified this tendency: many participants reported that the anticipation of “making another mistake” prevented them from acting, even when logic or evidence suggested potential gains. As Zeelenberg and Pieters (2007) note, such regret-related inhibition can transform learning experiences into long-term psychological barriers that suppress initiative.

The interpretation of these findings must, however, be situated within the specific socio-cultural context of ethnic entrepreneurship. For many immigrant business owners in Québec, entrepreneurship represents both an economic strategy and a pathway to social mobility and integration. Failure is thus perceived not only as a financial loss but also as a threat to social standing, family expectations, and identity within both the host and ethnic communities. This dual pressure magnifies emotional responses to risk, deepening the effects of regret and loss aversion.

Moreover, insights from the qualitative phase of this research indicated that several entrepreneurs linked their risk aversion to prior experiences of instability, such as job insecurity, discrimination, or bureaucratic difficulties during settlement. These experiences may foster a “scarcity mindset,” in which the preservation of limited resources becomes more important than pursuing potential gains. Consequently, behavioral biases such as loss aversion and regret avoidance may function as psychological defense mechanisms, protecting entrepreneurs from perceived threats but simultaneously constraining growth.

From a managerial perspective, these findings highlight the critical role of structured decision-making frameworks, such as the PM² methodology, and financial literacy development in mitigating the negative effects of emotional bias. By providing procedural clarity, analytical tools, and feedback mechanisms, these practices can help entrepreneurs move from emotion-driven to evidence-based decision-making. In this sense, improving rational evaluation and emotional

regulation may not only enhance individual investment outcomes but also contribute to the long-term sustainability and resilience of ethnic businesses in multicultural economies such as Québec.

6.1.2.2. Framing and EEs' Investment Success

Framing significantly impacted investment outcomes ($\beta = -0.38$, $t = 3.037$, $p < 0.05$). Entrepreneurs often evaluated investment decisions based on how choices were presented or perceived, rather than on objective or data-driven criteria. Positive or negative framing of potential gains and losses shaped their perception of risk, influencing both the willingness to invest and the scale of resources committed to new ventures. Mis-framed decisions frequently led to underinvestment or inefficient allocation of resources, thereby negatively affecting business performance, sustainability, adaptability, and overall satisfaction.

These results are consistent with the foundational work of Tversky and Kahneman (1981), who demonstrated that individuals' choices can vary dramatically depending on whether the same situation is framed as a potential gain or a potential loss. In entrepreneurial contexts, such framing effects can distort the perception of opportunity and risk, leading to systematic deviations from rational decision-making (Doyle, 2009; Simon, Houghton, & Aquino, 2000). For ethnic entrepreneurs, who often operate in uncertain environments and depend heavily on personal judgment rather than institutional support, the way information and outcomes are framed can have a disproportionate effect on strategic choices.

The findings of this study suggest that framing not only affects short-term investment behavior but also affects how EEs interpret business challenges and market signals. When potential setbacks are framed as learning opportunities, entrepreneurs tend to show greater resilience and adaptability; conversely, when challenges are framed in purely negative terms, they are more likely to adopt defensive or risk-averse strategies. This underscores the importance of cognitive reframing and reflective thinking in enhancing entrepreneurial decision quality. Training programs, mentoring, and experience-sharing platforms that help EEs identify framing biases could contribute to more rational investment behavior and improved business sustainability.

6.1.2.3. Mental Accounting and EEs' Investment Success

Mental accounting also demonstrated a significant negative effect on investment success ($\beta = -0.441$, $t = 3.671$, $p < 0.05$). Ethnic entrepreneurs often tended to categorize and treat financial

resources differently based on subjective labels or informal mental “budgets,” leading to suboptimal allocation of capital across business activities. For instance, funds mentally designated as “savings” were often excluded from potential investment consideration, while “operational” or “daily” funds might be overcommitted to uncertain or high-risk projects. This compartmentalization distorted decision-making by preventing entrepreneurs from evaluating their resources holistically and strategically. As a result, performance, adaptability, sustainability, and overall satisfaction were negatively affected.

These findings correspond with Thaler’s (1999) theory of mental accounting, which demonstrates that individuals tend to separate money into distinct mental categories rather than considering the overall financial picture. This behavior, while psychologically comforting, often leads to inefficient resource allocation and inconsistent financial decisions. In entrepreneurial contexts, especially among ethnic entrepreneurs operating in resource-constrained or uncertain environments, mental accounting can exacerbate risk misperception and reduce financial flexibility.

The tendency to isolate financial decisions within mental “accounts” may also limit the ability of entrepreneurs to leverage capital efficiently or to reinvest profits strategically. Moreover, the cultural and emotional dimensions of entrepreneurship, such as fear of debt or the desire to preserve family savings, may reinforce this compartmentalized thinking. Consequently, mental accounting not only affects financial efficiency but also reflects deeper psychological and sociocultural factors influencing entrepreneurial behavior.

From a practical standpoint, the results suggest that improving financial literacy and fostering integrated financial planning skills could mitigate the adverse effects of mental accounting. Training programs that emphasize total portfolio thinking, encouraging entrepreneurs to view their financial resources as interconnected rather than isolated, may enhance both rational decision-making and investment success. This is particularly critical for ethnic entrepreneurs, whose ventures often rely heavily on personal and family funds, making the mental separation of accounts even more impactful on business outcomes.

Overall, the findings related to prospect theory underscore its central role in explaining the behavioral dynamics underlying ethnic entrepreneurs’ investment decisions. The significant effects of regret and loss aversion, framing, and mental accounting collectively highlight that many

entrepreneurial decisions are not driven purely by rational evaluation of risks and returns but are instead deeply influenced by emotional and cognitive biases. These biases interact to create a pattern of cautious, fragmented, and sometimes inconsistent decision-making—where fear of losses, sensitivity to how options are presented, and compartmentalized financial thinking jointly constrain optimal investment behavior.

This behavioral tendency can be particularly pronounced among ethnic entrepreneurs, who often operate in uncertain environments with limited financial buffers and heightened social and familial pressures. The emotional weight of potential failure, both financial and reputational, may amplify loss aversion and encourage risk avoidance, even in contexts where calculated risk-taking could lead to growth. Similarly, the framing of opportunities within culturally or personally meaningful narratives can distort perception of value, while mental accounting further fragments the decision-making process by preventing integrated resource management.

From a theoretical perspective, these findings reaffirm the relevance of Kahneman and Tversky's (1979) prospect theory in entrepreneurial contexts, demonstrating its explanatory power beyond individual consumption or investment choices and into the realm of small business management. Practically, the results suggest that mitigating these cognitive distortions through targeted training, particularly in financial literacy, reflective decision-making, and project management (such as the PM² framework), could enhance rational evaluation and long-term investment success. By addressing the psychological underpinnings of decision-making, ethnic entrepreneurs can move toward a more adaptive and opportunity-oriented approach, balancing emotional caution with strategic foresight.

6.1.3. Market Conditions and Investment Success (H1c)

The analysis revealed that Market Conditions, as a main factor, did not have a statistically significant effect on the investment success of ethnic entrepreneurs ($\beta = 0.068$, $t = 0.812$, $p = 0.417$), leading to the rejection of Hypothesis H1c. This indicates that external market dynamics do not directly determine performance, sustainability, adaptability, satisfaction, or social outcomes in the studied context. Ethnic entrepreneurs' decisions appear to rely more heavily on internal cognitive processes, such as heuristics and prospect theory biases, and methodological approaches, rather than on observable market signals.

The non-significant effect can be interpreted considering the localized and community-based nature of many ethnic entrepreneurial ventures. Entrepreneurs often operate within informal networks and may lack access to broader market information, reducing the practical influence of market conditions on decision-making. While traditional finance theory emphasizes the role of market trends and competition in shaping investment outcomes (Fama, 1970; Markowitz, 1952), small-scale ethnic entrepreneurship may be less exposed to these forces, instead being driven by personal judgment, experience, and social norms.

To better understand how specific elements of the external environment may contribute, or fail to contribute, to investment outcomes, the next section examines the three subcomponents of Market Conditions: herding behavior, past trends, and market information, each of which may interact differently with entrepreneurs' cognitive processes and decision-making strategies.

6.1.3.1. Herding behavior and Investment Success

Herding behavior, defined as following the investment actions of peers or the majority, did not have a significant effect on the investment success of ethnic entrepreneurs in this study ($\beta = 0.04$, $t = 1.669$, $p = 0.095$). This indicates that, despite the potential for social influence, entrepreneurs in the sample did not systematically base their investment decisions on peer actions, and imitation alone did not meaningfully affect business performance, sustainability, adaptability, satisfaction, or social outcomes.

One possible explanation is that ethnic entrepreneurs often operate within small, tightly knit communities where individual decision-making is influenced more by personal judgment, experience, and cognitive biases (heuristics, prospect theory) than by observing others. In such contexts, peer behavior may provide insufficient informational advantage, and entrepreneurs may perceive that their unique resources, risk tolerance, or market positioning require independent decision-making rather than blind following.

These findings contrast with studies in broader financial and entrepreneurial contexts, where herding behavior has been shown to significantly affect investment patterns. For example, Banerjee (1992) and Bikhchandani et al., (2000) found that herding can lead to cascades in financial markets, resulting in large-scale coordination of investor behavior. Similarly, research in small-business and venture capital contexts often reports that imitation of peers can affect strategic and investment choices (Zhang et al., 2019). However, the present results suggest that in ethnic

entrepreneurial settings, the influence of herding is attenuated, likely due to localized market knowledge, culturally embedded decision norms, and reliance on individual judgment rather than mass behavior.

Moreover, the non-significant effect may reflect a strategic awareness among entrepreneurs that simply copying others does not guarantee success, especially in niche or community-specific markets where contextual adaptation is critical. This aligns with Alvarez and Barney (2007), who argue that uncritical imitation of others' strategies can undermine venture-specific advantages and long-term performance, particularly when environmental conditions or resources differ.

6.1.3.2. Past Trends and Investment Success

Past trends, defined as reliance on historical market performance or previous investment patterns when making current decisions, did not have a significant effect on the investment success of ethnic entrepreneurs in this study ($\beta = 0.06$, $t = 1.702$, $p = 0.089$). This indicates that entrepreneurs did not systematically use prior market trends to guide their investment decisions, and historical patterns alone did not meaningfully influence business performance, sustainability, adaptability, satisfaction, or social outcomes.

One explanation is that ethnic entrepreneurs often operate in small-scale, localized markets where past trends may not be a reliable predictor of future performance. These markets are frequently subject to rapid changes, informal structures, and community-specific dynamics, reducing the practical relevance of historical patterns for decision-making. Entrepreneurs may instead prioritize personal judgment, experience, and cognitive assessments (e.g., heuristics, prospect theory biases) over historical market data when allocating resources or selecting investment projects.

These findings differ from broader financial and entrepreneurial literature, where past trends often serve as critical reference points for decision-making. For instance, Barberis, Shleifer, and Vishny (1998) demonstrate that trend-following strategies influence investor behavior in financial markets, while studies in entrepreneurial contexts suggest that historical performance metrics can guide opportunity evaluation and risk assessment (Boehme et al., 2013). However, the present results suggest that, in ethnic entrepreneurial settings, the practical utility of past trends is limited, likely due to small market size, high environmental uncertainty, and reliance on personal and social knowledge rather than formal market signals.

Additionally, the non-significant effect of past trends may reflect an adaptive decision-making strategy. Entrepreneurs may recognize that historical market behavior does not always translate to their specific context, particularly when resources, networks, and competitive conditions differ from those underlying previous patterns. This aligns with Alvarez and Barney (2007), who argue that contextual differences can render general market observations less useful for venture-specific strategic decisions, highlighting the importance of individualized evaluation over mechanical reliance on historical trends.

In summary, while past trends theoretically offer guidance for investment decisions, they do not significantly influence the investment success of ethnic entrepreneurs in the studied context. This underscores the predominance of internal cognitive processes and methodological approaches over external historical signals and suggests that interventions aimed at improving investment outcomes should focus more on decision-making processes and management practices rather than historical market trends.

6.1.3.3. Market Information and Investment Success

Market information, defined as access to and use of formal or informal data about market conditions, competitor actions, and demand trends, did not have a significant effect on the investment success of ethnic entrepreneurs in this study ($\beta = 0.07$, $t = 1.611$, $p = 0.107$). This indicates that, although theoretically market information could guide investment decisions, in this context it did not meaningfully influence performance, sustainability, adaptability, satisfaction, or social outcomes.

A possible explanation is that ethnic entrepreneurs often operate within localized or community-based markets, where formalized market data is scarce, incomplete, or not directly relevant to their business decisions. In addition, the limited availability of comprehensive databases or structured business intelligence on ethnic entrepreneurial activities further constrains the practical use of market information. Instead, entrepreneurs rely more heavily on personal experience, social networks, and cognitive judgment (heuristics and prospect theory biases) when evaluating opportunities and making investment choices. Consequently, the availability of market information does not translate into measurable advantages in investment success.

These findings differ from studies in broader entrepreneurial and financial contexts, which often highlight the importance of market information for reducing uncertainty and improving

decision quality. For example, studies by Gibbons and Roberts (2012) and Shane (2000) show that access to accurate market intelligence enables better opportunity evaluation, risk assessment, and resource allocation. However, the current results suggest that in ethnic entrepreneurial environments, the practical impact of such information is attenuated, likely due to the small scale of operations, rapid environmental changes, reliance on informal networks, and the limited presence of centralized databases for these ventures.

Furthermore, the non-significant effect of market information may reflect the entrepreneurs' adaptive strategies. Entrepreneurs may recognize that generalized market data is often delayed, incomplete, or irrelevant to their specific community context. This aligns with Alvarez and Barney (2007), who argue that generalized information may be of limited use when venture-specific contextual factors dominate, highlighting the importance of personalized judgment and local knowledge over broad market data.

In summary, while market information has theoretical relevance for investment decision-making, it does not significantly determine the investment success of ethnic entrepreneurs in this study. The findings reinforce that internal cognitive factors (heuristics and prospect theory) and methodological practices (PM²) are more critical determinants of venture outcomes than external market signals, including historical trends, peer behaviors, or available market data, particularly in contexts with limited business information and databases.

6.2. PM² Methodology as a Mechanism in the Relationship Between BF and EEIS

PM² methodology plays a central role in shaping how behavioral finance influences investment success among ethnic entrepreneurs. In this section, we examine its dual function: first, as a mediator that channels behavioral tendencies into structured decision-making, and second, as a mechanism that conditionally modifies the strength of this effect through moderated- mediation.

6.2.1. PM² Methodology as a Mediator in the Relationship Between BF and EEIS (H2)

The mediation analysis tested whether PM² methodology, comprising agile management, program management, and portfolio management, transmits the effect of behavioral finance (BF) on the investment success of ethnic entrepreneurs (EEs). The results show that PM² significantly

mediates this relationship ($\beta = 0.263$, $t = 2.210$, $p = 0.027$), confirming Hypothesis H4. This indicates that part of the influence of cognitive biases and behavioral tendencies on investment outcomes operates through the structured application of project and program management practices.

The significant mediating effect suggests that PM² methodology serves as an internal mechanism that channels or modifies the impact of behavioral biases on entrepreneurial investment success. Entrepreneurs who effectively apply agile practices, structured program management, and portfolio oversight can partially buffer the negative effects of heuristics, prospect theory tendencies, and decision-making biases. By introducing structured planning, continuous monitoring, and adaptive project execution, PM² allows entrepreneurs to better align their decisions with rational and goal-oriented processes, even in the presence of behavioral distortions. Agile management enables flexible responses to uncertainties and rapid environmental changes, mitigating overconfidence, optimism, and representativeness biases, while program management ensures coordinated planning and resource allocation across multiple ventures, addressing cognitive distortions related to mental accounting and framing. Portfolio management, although theoretically relevant, did not show a significant effect in this study, suggesting that the mere presence of portfolio-level structures without active integration may not substantially offset behavioral biases.

The results align with prior research emphasizing the role of structured management practices in moderating the negative effects of cognitive biases. For example, PMI (2017) and Turner & Zolin (2012) highlight that project management methodologies, particularly those with agile and program-level structures, enhance decision-making quality and reduce the likelihood of errors due to overconfidence or bounded rationality. Similarly, Kreiser et al. (2010) and Del Giudice et al. (2016) argue that management frameworks can act as corrective mechanisms that improve resource allocation, risk assessment, and investment outcomes in entrepreneurial settings. The findings extend this literature to ethnic entrepreneurs, demonstrating that PM² methodology mediates the impact of behavioral finance biases, partially translating internal cognitive tendencies into observable investment results.

A closer examination of the PM² subcomponents provides further insights. Agile management and program management both exhibit significant mediation effects, indicating that

these practices help channel behavioral influences into more structured, controlled decision-making processes. In contrast, portfolio management did not significantly mediate the relationship, suggesting that without integrated monitoring and adaptive mechanisms, portfolio-level interventions alone may not suffice to reduce the negative impact of behavioral biases. These findings confirm sub-hypotheses H4a and H4b but reject H4c.

The mediating role of PM² highlights the importance of methodological rigor in ethnic entrepreneurial ventures. By embedding structured management practices into investment and operational decisions, entrepreneurs can reduce the detrimental impact of cognitive biases, enhancing performance, sustainability, adaptability, satisfaction, and social outcomes. The results also suggest that targeted interventions focusing on agile and program management practices may be particularly effective in improving investment success in contexts characterized by high reliance on heuristics and emotional decision-making.

6.2.2. PM² as a Moderated-Mediation Mechanism in the link Between BF and EEIS (H4)

The results of this study confirm that the PM² methodology plays a moderated-mediation role in the relationship between Behavioral Finance (BF) and the investment success of ethnic entrepreneurs (EEs). Statistically, PM² was found to mediate the influence of behavioral biases on investment outcomes ($\beta = 0.263$, $t = 2.210$, $p = 0.027$) and also moderate the strength of this relationship through interaction effects ($\beta = 0.14$, $t = 3.12$, $p < 0.01$). Together, these findings support Hypothesis H4, suggesting that PM² functions both as a mechanism that channels the impact of behavioral tendencies and as a buffer that mitigates their adverse effects on entrepreneurial decision-making and performance.

From a mediating perspective, PM² operates as an internal translational mechanism that restructures the influence of cognitive and emotional biases into more rational and methodical decision-making processes. Ethnic entrepreneurs who adopt PM² practices, particularly Agile Management and Program Management, are able to transform impulsive, bias-driven judgments into structured, evidence-based strategies. Through systematic planning, performance monitoring, and adaptive learning, PM² provides the cognitive scaffolding needed to counter bounded rationality (Simon, 1957) and guide decisions toward long-term sustainability. By integrating

behavioral awareness with structured management routines, PM² helps entrepreneurs align their investment behaviors with realistic objectives and actionable insights, even under uncertainty.

The moderating analysis reinforces this relationship. The significant interaction between BF and PM² implies that the negative impact of behavioral biases on investment success diminishes as the use of PM² increases. In other words, high levels of PM² implementation reduce the intensity of irrational decision patterns, while low engagement allows biases such as overconfidence, optimism, and mental accounting to exert stronger negative effects. This dynamic aligns with Kahneman's (2011) dual-process model, which posits that deliberate, structured thinking (System 2) can correct intuitive, error-prone decision-making (System 1). Within ethnic entrepreneurship—where intuition and social norms heavily influence behavior—PM² thus acts both as a corrective shield and a behavioral guide, fostering balanced and evidence-based investment decisions.

Agile Management ($\beta = 0.120$, $t = 2.351$, $p = 0.021$) demonstrated its significant moderated-mediation effect. Agile practices emphasize flexibility, iterative learning, and rapid feedback loops, all of which reduce susceptibility to optimism, overconfidence, and representativeness biases. By enabling continuous adaptation and team-based reflection, Agile Management helps entrepreneurs respond to uncertainty with resilience rather than impulsivity (Rigby, Sutherland & Takeuchi, 2016). This finding supports previous studies (e.g., Serrador & Pinto, 2015) showing that agile practices improve project performance by promoting responsiveness and cognitive discipline in decision-making.

Program Management ($\beta = 0.101$, $t = 2.122$, $p = 0.034$) also showed a significant effect, confirming that structured coordination across related projects enhances resource alignment, risk assessment, and control mechanisms. Program-level oversight allows entrepreneurs to correct mental accounting distortions and framing effects by evaluating initiatives holistically rather than in isolation (Turner & Zolin, 2012). This supports the notion that integrated management systems reduce the impact of individual biases by distributing decision authority and formalizing evaluation criteria (Mir & Pinnington, 2014).

Portfolio Management ($\beta = 0.05$, $t = 1.280$, $p = 0.201$), however, did not demonstrate a significant mediating or moderating role. This suggests that, while portfolio-level strategies may theoretically enhance decision efficiency, in practice they might be too abstract or insufficiently embedded in day-to-day entrepreneurial operations to effectively counter behavioral distortions.

In small-scale ethnic ventures, portfolio management structures are often informal or underdeveloped, reducing their capacity to influence bias-laden decisions. This result aligns with findings by Martinsuo (2013), who observed that portfolio frameworks are less effective in micro and small-enterprise contexts due to limited procedural integration.

Overall, these results highlight that the behavioral correction potential of PM² lies primarily in its agile adaptability and programmatic coordination, not merely in hierarchical or portfolio-level oversight. The moderating and mediating effects of PM² confirm that structured methodologies can simultaneously channel and contain behavioral distortions, transforming irrational tendencies into disciplined decision outcomes.

These findings are consistent with a growing body of research emphasizing the behavioral utility of project management systems. PMI (2017) and Turner (2009) argue that methodologies like PM² foster consistency, transparency, and rational control, all of which limit the scope for bias-driven errors. Similarly, Del Giudice et al. (2016) and Kreiser et al. (2010) show that structured managerial frameworks can moderate the effects of cognitive limitations, leading to more effective resource allocation and improved performance. The present study extends this theoretical understanding to the ethnic entrepreneurship context, showing empirically that PM²'s dual role as mediator and moderator enhances investment success through both structural discipline and behavioral correction.

Practically, this dual mechanism implies that policy initiatives and training programs aiming to strengthen ethnic entrepreneurs' decision-making should emphasize agile and program management competencies as key behavioral stabilizers. By doing so, entrepreneurs can not only mitigate the detrimental effects of behavioral biases but also translate their experiential and intuitive strengths into systematically successful investment strategies.

In conclusion, PM² methodology functions as a behavioral and structural bridge between cognitive bias and investment performance. Its mediating role translates behavioral influences into structured outcomes, while its moderating role reduces the magnitude of those biases altogether. This moderated-mediation dynamic provides a nuanced explanation for why ethnic entrepreneurs who systematically apply PM² principles demonstrate higher levels of performance, sustainability, and satisfaction, even within inherently uncertain and behaviorally complex environments.

6.3. Financial Literacy as a Moderator in the Relationship Between BF and EEIS (H3)

The analysis confirmed that Financial Literacy (FL) significantly moderates the relationship between Behavioral Finance (BF) and the investment success of ethnic entrepreneurs (EEs) ($\beta = 0.258$, $t = 3.117$, $p = 0.002$), thereby supporting Hypothesis H3. This result indicates that higher levels of financial literacy attenuate the negative influence of behavioral biases, such as overconfidence, optimism, and mental accounting, on entrepreneurial outcomes. In other words, financially literate entrepreneurs are better equipped to recognize, interpret, and counteract the cognitive and emotional distortions that often undermine rational decision-making, leading to improved performance, sustainability, adaptability, and satisfaction.

From a theoretical standpoint, financial literacy operates as a cognitive corrective mechanism within the behavioral decision framework. According to Lusardi and Mitchell (2014), financial literacy provides individuals with the analytical tools and conceptual frameworks necessary to evaluate risk, opportunity, and trade-offs objectively, thereby reducing the susceptibility to heuristic-based errors. In the context of ethnic entrepreneurship, where decisions are often influenced by social networks, intuition, and informal advice, financial literacy acts as a rationalizing force, enabling entrepreneurs to ground their choices in evidence rather than emotion or imitation. This moderating effect aligns with findings from Potrich, Vieira, and Mendes-Da-Silva (2016), who noted that financial literacy enhances individuals' capacity to make consistent and well-informed financial decisions under uncertainty.

Statistically, the positive interaction between BF and FL indicates that as financial literacy increases, the adverse impact of behavioral biases on investment success diminishes. Entrepreneurs with higher literacy levels demonstrate greater control over biases like optimism (overestimating success probabilities) and mental accounting (segregating investments irrationally). They also show more disciplined financial behavior, consistent with the dual process view of decision-making (Kahneman, 2011), where literacy strengthens deliberative, analytical thinking, counteracting impulsive, intuitive biases.

Financial Competency ($\beta = 0.211$, $t = 2.864$, $p = 0.004$) emerged as a strong moderator, highlighting the importance of numeracy, budgeting skills, and understanding of financial instruments. Competency enables entrepreneurs to assess the feasibility and risk profile of investment opportunities with greater precision, reducing overconfidence and representativeness

errors. This aligns with the findings of Huston (2010), who emphasized that basic financial knowledge improves individuals' capacity to interpret information accurately and make prudent financial judgments. Among ethnic entrepreneurs, higher competency also enhances the ability to plan cash flows and forecast outcomes, thereby supporting sustainability and resilience against market volatility.

Financial Professionality ($\beta = 0.235$, $t = 2.972$, $p = 0.003$), reflecting the use of professional financial practices such as record-keeping, consulting financial advisors, and applying formal analytical methods, also showed a significant moderating effect. Professionalism helps mitigate biases associated with mental accounting and framing by introducing structured evaluation criteria and external oversight. Empirical evidence from Bruhn and Zia (2013) supports this notion, showing that professional financial management training leads to measurable improvements in entrepreneurial decision-making quality and business performance. For ethnic entrepreneurs, who often rely on informal practices and community-based finance, professionalization represents a shift toward formal control and strategic decision frameworks that counter behavioral distortions.

Financial Opportunity ($\beta = 0.198$, $t = 2.746$, $p = 0.006$) demonstrated a significant moderating effect on the relationship between behavioral finance biases and investment success. This indicates that ethnic entrepreneurs who have greater access to financial resources, credit facilities, and investment-related information are better able to mitigate the adverse effects of cognitive biases on their decision-making and investment outcomes. In other words, Financial Opportunity enhances the ability of entrepreneurs to leverage rational evaluation and managerial practices to improve performance, sustainability, adaptability, and satisfaction. However, while the effect is significant, its magnitude is smaller compared to other dimensions of financial literacy, such as competency and professionalism. This suggests that access to financial opportunities alone is not sufficient; it needs to be complemented by knowledge, skills, and professional experience to maximize its impact. Structural barriers, such as limited integration into mainstream financial networks, lack of culturally tailored financial services, and informational asymmetries, may constrain how fully entrepreneurs can capitalize on these opportunities (Aterido, Beck, & Iacovone, 2013). Thus, Financial Opportunity plays an important enabling role: it provides ethnic entrepreneurs with the potential to improve investment decision-making and outcomes, particularly when combined with competency and professional literacy, reinforcing the broader moderating influence of financial literacy in this study.

Overall, these findings suggest that financial literacy moderates behavioral finance effects primarily through the internal dimensions of knowledge and professionalism, rather than through mere access to financial opportunities. The combined influence of competency and professionalism allows entrepreneurs to transform cognitive awareness into effective financial behavior, thereby buffering against irrational tendencies and improving investment outcomes. This pattern reinforces the argument that knowledge-driven financial capability, rather than access-driven inclusion, is the true foundation of rational entrepreneurial finance (Lusardi, 2019; OECD, 2019).

The moderating role of financial literacy has significant implications for policy and practice. It implies that interventions aimed at enhancing the investment performance of ethnic entrepreneurs should go beyond increasing financial access. Instead, they should prioritize capacity-building programs that strengthen financial knowledge, promote professional financial management, and foster critical evaluation skills. By improving financial literacy, policymakers and development agencies can help ethnic entrepreneurs not only make better financial choices but also resist the influence of behavioral biases that often lead to poor performance and business failure.

In conclusion, financial literacy serves as an essential behavioral stabilizer within the entrepreneurial ecosystem. Its moderating function ensures that behavioral biases exert a weaker influence on decision-making when entrepreneurs possess strong financial knowledge and professional competence. The evidence from this study supports the view that financial literacy transforms behavioral vulnerability into cognitive resilience, enabling ethnic entrepreneurs to achieve higher levels of investment success and long-term sustainability.

6.4. Business Environment as a Moderator in the Relationship Between BF and EEIS (H4)

The analysis revealed that the Business Environment (BE), considered as an overarching construct, did not exert a statistically significant moderating effect on the relationship between Behavioral Finance (BF) and the investment success of ethnic entrepreneurs (EEs) ($\beta = -0.061$, $t = 0.807$, $p = 0.419$). Therefore, Hypothesis H4 was partially supported: while the overall moderating effect of BE was not significant, one of its subcomponents, ecological factors, demonstrated a meaningful influence. This suggests that although the general economic context (macro- and micro-level factors) does not substantially alter the impact of behavioral biases on

investment success, environmental sustainability and ecological considerations can shape entrepreneurial decision-making in specific ways.

The absence of a significant overall effect highlights the predominance of internal cognitive and methodological drivers over broad economic influences in guiding ethnic entrepreneurs' investment behavior. Many ethnic entrepreneurs operate within localized, trust-based markets, often insulated from national macroeconomic fluctuations and formal competitive pressures (Altinay et al., 2014; Chrysostome, 2010). In such contexts, behavioral tendencies, including heuristics, mental accounting, and framing effects, remain the primary determinants of investment outcomes, regardless of general economic conditions.

Nonetheless, the significance of ecological factors points to an emerging dimension of contextual sensitivity. Entrepreneurs may incorporate environmental considerations into resource allocation, operational planning, or product/service offerings, and these considerations appear to interact with their cognitive biases in shaping investment success. For instance, businesses that align with sustainable practices may attract niche markets, enhance reputation, or leverage incentives, thereby partially mitigating the negative impact of biases on performance and adaptability.

Overall, these findings underscore the selective influence of contextual factors: while macroeconomic trends and microeconomic conditions are less salient, ecological aspects can meaningfully influence how behavioral biases translate into investment outcomes. This nuanced understanding suggests that interventions aimed at supporting ethnic entrepreneurs should consider targeted environmental strategies, such as eco-friendly initiatives, sustainability training, or regulatory incentives, rather than relying solely on general economic policies to moderate behavioral decision-making.

6.4.1. Macroeconomic and Microeconomic Factors

Neither macroeconomic ($\beta = -0.057$, $t = 0.821$, $p > 0.05$) nor microeconomic ($\beta = -0.048$, $t = 0.774$, $p > 0.05$) factors exhibited a significant moderating effect on the relationship between Behavioral Finance (BF) and the investment success of ethnic entrepreneurs. This indicates that variations in macroeconomic indicators, such as interest rates, inflation, and overall economic growth, as well as microeconomic conditions like local competition, market demand, or consumer

behavior, did not substantially influence the behavioral processes driving investment decisions. In other words, ethnic entrepreneurs' investment choices appear to be largely guided by internal cognitive biases, heuristics, and methodological practices rather than by external economic fluctuations, reflecting the localized and context-specific nature of their business environments.

This can be interpreted through the lens of the bounded rationality framework (Simon, 1957), which posits that entrepreneurs operating under uncertainty and resource constraints rely on heuristics and simplified decision rules rather than fully analyzing macroeconomic indicators. Many ethnic entrepreneurs in this study operate within community-specific sectors, such as retail, food services, or cultural goods, where national-level economic fluctuations are filtered through localized demand, informal networks, and community-specific financial arrangements (Levie et al., 2011). Consequently, even when macroeconomic conditions shift, these entrepreneurs may continue to prioritize familiar routines, social obligations, and culturally embedded practices over conventional economic signals.

Similarly, microeconomic dynamics, including local competition, pricing elasticity, or supply-side changes, appear less influential because factors such as customer loyalty, cultural affinity, and social reputation often drive business performance more strongly than traditional market forces (Dana, 2007). Ethnic entrepreneurs' embeddedness within their communities allows them to maintain resilience and continuity despite minor fluctuations in local market conditions.

These findings contrast with classical market-based theories (Fama, 1970; Porter, 1980), which assume that macro- and microeconomic conditions are the dominant determinants of firm success. Instead, the results align with contemporary research on ethnic entrepreneurship, highlighting how community embeddedness, social capital, and culturally mediated networks buffer entrepreneurs from the full impact of external economic pressures (Altinay et al., 2014; Ram, 2017). In effect, the findings underscore that for ethnic entrepreneurs, investment outcomes are shaped more by internal behavioral processes and relational contexts than by generalized economic conditions, emphasizing the importance of social and cultural factors in entrepreneurial decision-making.

6.4.2. Ecological Factors

In contrast, ecological factors ($\beta = 0.126$, $t = 2.264$, $p = 0.023$) were found to significantly moderate the relationship between behavioral finance and investment success. This means that environmental and sustainability-related conditions alter how behavioral biases influence entrepreneurs' decision outcomes. In contexts where ecological awareness, sustainability norms, or environmental pressures are stronger, the negative impact of behavioral biases such as optimism, overconfidence, or framing appears to diminish.

This result highlights the disciplining effect of ecological awareness on entrepreneurial cognition. When entrepreneurs operate in environments where sustainability, environmental responsibility, and long-term resource efficiency are emphasized, they may adopt a more reflective and analytical approach to decision-making, reducing impulsive or emotionally driven choices. This moderating influence supports the principles of ecological modernization theory (Schaltegger & Wagner, 2011), which suggests that environmental considerations can transform managerial behavior and promote more rational, long-term planning.

Empirical studies confirm this interpretation. For example, Cohen and Winn (2007) argue that ecological awareness introduces new opportunity structures that encourage entrepreneurs to integrate sustainability with risk management. Similarly, Hockerts and Wüstenhagen (2010) found that sustainability-oriented entrepreneurs demonstrate stronger self-regulation, reducing the influence of common behavioral distortions. In ethnic entrepreneurial contexts, where social embeddedness and community reputation are highly valued, ecological consciousness can strengthen decision discipline and encourage strategic thinking beyond short-term returns.

6.5. Comparative Integration of All Factors

The preceding analyses collectively demonstrate that the investment success of ethnic entrepreneurs (EEs) is shaped by a complex interplay between cognitive, methodological, educational, and contextual factors. This integrative discussion synthesizes the relative strengths and interactions among these determinants, Behavioral Finance (BF), PM² methodology, Financial Literacy (FL), and the Business Environment (BE), to provide a holistic interpretation of how biases and management practices jointly influence entrepreneurial outcomes.

6.5.1. Dominant Role of Behavioral Finance Biases

Among all tested relationships, Behavioral Finance emerged as the most influential determinant, exerting a strong and negative effect on investment success ($\beta = -0.36$, $p < 0.001$). This confirms that cognitive distortions, particularly those rooted in heuristics and prospect theory, significantly constrain rational decision-making among EEs. Heuristic-driven biases such as optimism, overconfidence, and representativeness directly undermined business performance, sustainability, and satisfaction, whereas biases related to availability and anchoring were contextually less impactful. Similarly, components of prospect theory, notably regret and loss aversion, framing, and mental accounting, reinforced the emotional and cognitive limitations in investment behavior.

This dominance of behavioral effects aligns with extensive empirical evidence showing that small business owners and entrepreneurs are more vulnerable to psychological distortions due to their reliance on intuition, personal experience, and limited formal analytics (Kahneman & Tversky, 1979; Busenitz & Barney, 1997; Baron, 2008). The results corroborate findings by Simon (1957) and Shefrin (2000), who argue that under bounded rationality and uncertainty, cognitive shortcuts substitute for systematic analysis. In ethnic entrepreneurship contexts, where decision-making often occurs within informal, trust-based networks, the effects of these biases become even more pronounced, explaining the consistently negative relationship observed.

6.5.2. Corrective and Structuring Role of PM² Methodology

In contrast to the adverse impact of behavioral biases, PM² methodology functioned as a corrective and structuring mechanism, mediating and moderating the behavioral influences on investment success ($\beta = 0.263$, $p < 0.05$ for mediation; $\beta = 0.14$, $p < 0.01$ for moderation). PM²'s structured project management practices, encompassing agile management, program management, and portfolio management, provided a systematic framework that transformed intuitive decision-making into more evidence-based and disciplined processes.

Agile and program management were particularly effective in buffering cognitive distortions, while portfolio management did not significantly influence outcomes—suggesting that flexibility, feedback loops, and team coordination are more beneficial for small ethnic ventures than formalized portfolio-level governance. These results reinforce Turner and Zolin's (2012)

assertion that agile and adaptive management improve cognitive alignment, reduce overconfidence, and increase responsiveness to uncertainty. Similarly, Del Giudice et al. (2016) emphasize that structured project governance enhances decision quality and learning capacity, mitigating behavioral biases.

Through this mediating and moderating role, PM² effectively translated behavioral tendencies into structured investment behavior, demonstrating that rationalization through managerial processes can partially overcome cognitive and emotional distortions. The methodological rigor embedded in PM² offers a practical counterbalance to the irrational tendencies inherent in behavioral finance, aligning with Simon's (1957) view that structured decision frameworks compensate for bounded rationality.

6.5.3. Enhancing Role of Financial Literacy

Financial Literacy (FL) exerted a positive and significant moderating influence ($\beta = 0.258$, $t = 3.117$, $p = 0.002$), confirming Hypothesis H3. Its components, competency, professionalism, and opportunity, each enhanced the entrepreneurs' capacity to interpret, evaluate, and respond rationally to financial information. This finding demonstrates that financial knowledge acts as a cognitive shield, reducing susceptibility to behavioral biases such as optimism and overconfidence while improving judgment under risk and uncertainty.

This moderating pattern is consistent with studies by Lusardi and Mitchell (2014) and van Rooij et al. (2011), who found that higher financial literacy improves financial decision outcomes and reduces behavioral anomalies such as myopic loss aversion or overtrading. Similarly, Aren and Aydemir (2015) show that financial competence enhances rational risk-taking and long-term financial sustainability. In the present study, financial literacy improved the effectiveness of PM² implementation, as financially literate entrepreneurs were better able to interpret data, allocate resources strategically, and sustain business growth. Thus, FL serves as both a knowledge-based buffer against cognitive distortion and a performance enhancer in investment decision-making.

6.5.4. Contextual Moderation by the Business Environment

The Business Environment (BE) demonstrated a partially supported moderating role, with the overall construct being non-significant but the ecological component exerting a meaningful

moderating effect. Macro- and microeconomic factors did not significantly alter the behavioral-financial relationship, reflecting the limited influence of external economic indicators on community-based entrepreneurship. However, ecological factors, representing environmental, sustainability, and resource-efficiency considerations, did moderate the relationship, indicating that ecological awareness and environmental pressures can discipline decision behavior and reduce irrationality.

This result aligns with ecological modernization perspectives (Schaltegger & Wagner, 2011; Cohen & Winn, 2007), which posit that sustainability frameworks can shape managerial cognition and promote long-term rationality. In ethnic entrepreneurship, ecological sensitivity may act as an external regulator that counterbalances optimism or overconfidence, promoting cautious and strategic behavior.

6.5.5. Integrative Interpretation and Theoretical Implications

Taken together, these findings illustrate that Behavioral Finance biases are the most powerful yet potentially correctable determinants of investment performance among ethnic entrepreneurs. Their effects can be mitigated through two complementary mechanisms: 1) Structural interventions (via PM² methodology), which institutionalize rational decision-making processes; and 2) Cognitive-capacity interventions (via financial literacy), which enhance awareness and analytical competence.

The business environment, particularly ecological factors, adds a contextual layer of influence, emphasizing that external pressures can also shape internal cognition and behavioral outcomes. These integrated insights contribute to the Behavioral Entrepreneurship literature by demonstrating that the intersection of cognitive psychology, management methodology, and contextual adaptation provides a multidimensional explanation for ethnic entrepreneurs' investment behavior. The findings extend Kahneman and Tversky's (1979) and Simon's (1957) frameworks by illustrating how methodological and educational interventions can transform bounded rationality into structured rationality.

From a policy and practice standpoint, this integration underscores that behavioral training, project management frameworks, and financial education should be promoted together as part of entrepreneurship development programs. Such integrated approaches would help ethnic

entrepreneurs reduce cognitive distortions, improve adaptability, and enhance overall business sustainability.

6.5.6. Discussion of Control Variables (Demographics)

In this study, several demographic characteristics, including gender, age, education, language fluency (French and English), and residency status, were treated as control variables to examine their potential influence on the primary relationships among behavioral finance, PM² methodology, financial literacy, business environment, and ethnic entrepreneurs' (EEs) investment success. The analysis revealed varying effects of these demographic factors, providing nuanced insights into how personal and contextual attributes shape entrepreneurial decision-making.

6.5.6.1. Gender

The analysis showed no statistically significant gender differences across the main variables of the study. Although slight numerical variations appeared in the descriptive statistics, these were not substantial enough to suggest meaningful gender-based distinctions in how entrepreneurs experience behavioral biases, apply PM² practices, or achieve investment outcomes. This finding indicates that gender does not systematically influence the pathways proposed in the research model, including the direct effect of behavioral finance on investment success, the mediating or moderating role of PM² methodology, or the conditional effects introduced by financial literacy and business environment. Both male and female entrepreneurs appear to navigate decision-making processes, project management practices, and investment activities in ways that are largely comparable. The absence of significant gender effects stands in contrast to some prior studies that have reported gender-based differences in risk perception and cognitive biases (Byrnes, Miller, & Schafer, 1999; Eckel & Grossman, 2008). However, the current results suggest that such distinctions may be less pronounced within the context of ethnic entrepreneurship, where shared external pressures—such as migration challenges, resource constraints, and market adaptation—may diminish traditional gender gaps in financial behavior. Overall, the results imply that gender is not a differentiating factor in the mechanisms driving investment success within this model. Consequently, interventions or training programs designed to enhance behavioral decision-making, strengthen PM² adoption, or leverage financial literacy and business environment

conditions may be applied uniformly across genders without necessitating gender-specific adaptations.

6.5.6.2. Age

The analysis revealed no statistically significant differences across age groups in behavioral finance tendencies, PM² methodology engagement, financial literacy, business environment perceptions, or EE investment success. This indicates that age did not meaningfully influence any component of the study's conceptual model, including the direct relationship between behavioral finance biases and investment success or the mediating and moderating roles of PM². These findings suggest that age is not a determining factor in how ethnic entrepreneurs experience cognitive biases, utilize structured project management practices, or achieve investment outcomes. Entrepreneurs across all age ranges, demonstrated comparable approaches to decision-making, PM² adoption, and the overall pathways leading to investment success. A possible explanation is that entrepreneurial experience, rather than chronological age, may be more influential in shaping behavioral patterns and methodological choices. Prior research supports this view, emphasizing that accumulated business exposure, learning through trial and error, and adaptation to market challenges are stronger predictors of decision-making quality than age alone (Cassar, 2007; Rauch & Frese, 2007). Thus, younger entrepreneurs may display sophisticated decision-making if they possess relevant experience, while older entrepreneurs lacking such experience may not necessarily perform better or apply methodologies more effectively. Overall, the results imply that age does not moderate or alter the mechanisms through which behavioral finance biases, PM² methodology, financial literacy, and the business environment influence investment success. This reinforces the idea that the cognitive and managerial processes underpinning investment performance operate similarly across age groups in the context of ethnic entrepreneurship.

6.5.6.3. Education

The results indicated no statistically significant differences across educational levels in behavioral finance tendencies, PM² methodology usage, financial literacy, business environment evaluations, or ethnic entrepreneurship investment success. This suggests that education did not meaningfully influence any part of the study's conceptual framework. Although minor descriptive variations existed between groups with lower and higher educational attainment, these differences were not large enough to imply meaningful distinctions in cognitive biases, methodological

adoption, or investment outcomes. Consequently, education does not appear to be a determining factor in shaping the decision-making processes or performance outcomes of ethnic entrepreneurs within this sample. One possible interpretation is that entrepreneurial capability may be cultivated more through experiential learning, informal knowledge acquisition, and practical exposure rather than formal education. Prior research highlights that entrepreneurial competencies often develop through real-world challenges, network interactions, and adaptive learning (Rauch & Frese, 2007; Unger et al., 2011), which may diminish the relative impact of formal educational credentials on decision-making quality and methodological choices. These findings therefore suggest that education does not moderate or condition the mechanisms through which behavioral biases, PM² use, and contextual moderators (financial literacy and business environment) influence ethnic entrepreneurship investment success. Entrepreneurs with different educational backgrounds appear to follow similar behavioral and managerial pathways within the model.

6.5.6.4. Language Fluency

Participants' proficiency in French and English significantly affected the relationships among behavioral finance, PM² methodology, and investment success. Entrepreneurs with higher language competency (upper-intermediate and advanced) were better able to access, interpret, and apply market information, understand financial documentation, and communicate effectively with advisors, clients, and other stakeholders. This enhanced comprehension and communication reduced the reliance on biased heuristics and framing effects, enabling more rational and strategic investment decisions. Additionally, higher language skills facilitated the effective adoption of structured PM² practices, as entrepreneurs could better understand procedural guidelines, coordinate with team members, and implement project management tools accurately. Conversely, entrepreneurs with elementary or pre-intermediate language proficiency faced challenges in accessing critical information, interpreting regulations, and engaging with financial and managerial advisors, which heightened their susceptibility to behavioral biases and constrained their investment outcomes. These findings underscore linguistic competence as a crucial enabling factor, not only for mitigating cognitive distortions (Zahra & George, 2002), but also for enhancing the capacity to apply systematic management methodologies in complex and uncertain entrepreneurial environments.

6.5.6.5. Residency Status

The analysis revealed no statistically significant differences between permanent residents and temporary or non-resident entrepreneurs across behavioral finance tendencies, PM² methodology usage, financial literacy, business environment, or ethnic entrepreneurship investment success. This indicates that residency status did not meaningfully influence any of the mechanisms in the study's conceptual model. Although minor variations in descriptive statistics were observed, these were not substantial enough to suggest that permanent or temporary residency impacts susceptibility to cognitive biases, engagement with structured project management practices, or investment performance. Entrepreneurs appear to operate with comparable behavioral patterns and methodological adoption regardless of their residency status. One possible explanation is that access to entrepreneurial resources, networks, and business information may be more closely linked to individual experience, financial literacy, and engagement with the local business environment than to formal residency status. Prior research supports the idea that integration and performance in entrepreneurial activities depend more on active participation and knowledge accumulation than on residency classification (Portes, 1995; Light & Gold, 2000). Overall, the findings suggest that residency status does not moderate or condition the pathways from behavioral finance tendencies through PM² methodology and contextual moderators to ethnic entrepreneurship investment success. Both permanent and temporary/non-resident entrepreneurs follow similar decision-making and investment processes within the model.

6.6. Summary of Chapter 6

Chapter 6 provided a comprehensive discussion and interpretation of the empirical results presented in Chapter 5, focusing on the relationships among behavioral finance, PM² methodology, financial literacy, business environment, and ethnic entrepreneurs' investment success. The chapter examined each main hypothesis and its subcomponents in detail, integrating the findings with theoretical insights and relevant literature to contextualize the results.

The analysis confirmed that Behavioral Finance (BF) exerts a significant negative impact on investment success, primarily through the effects of heuristics (optimism, overconfidence, representativeness) and prospect theory (regret/loss aversion, framing, mental accounting). These biases distort decision-making, leading to suboptimal performance, reduced satisfaction, limited sustainability, impaired adaptability, and weaker social outcomes. In contrast, the Market

Conditions factor and its subcomponents (herding behavior, past trends, and market information) did not significantly influence investment success, suggesting that ethnic entrepreneurs rely more on internal cognitive processes and methodological approaches than on external market signals.

The chapter also explored the moderated-mediation role of PM² methodology (H2), showing that it partially mediates and moderates the relationship between BF and investment success. Agile management and program management significantly buffered the negative effects of cognitive biases, whereas portfolio management did not. Similarly, Financial Literacy (H3) positively moderated the BF–investment success relationship, with all subcomponents, competency, professionalism, and opportunity, enhancing entrepreneurs’ capacity to make rational, informed decisions. For the Business Environment (H4), the overall moderating effect was rejected, though ecological factors did show a significant moderating influence, while macro- and microeconomic factors did not. Finally, demographic variables were discussed. All factors, except language proficiency, showed no significant effects, indicating that they did not meaningfully influence behavioral finance tendencies, PM² methodology engagement, or ethnic entrepreneurship investment success.

Overall, Chapter 6 synthesized the empirical findings, providing theoretical and practical interpretations of how cognitive biases, methodological practices, individual capabilities, and contextual factors jointly shape the investment success of ethnic entrepreneurs. The chapter set the stage for Chapter 7, which will focus on research contributions, limitations, and directions for future studies.

6.7. Résumé du Chapitre 6

Le chapitre 6 a présenté une discussion et une interprétation complètes des résultats empiriques exposés au chapitre 5, en se concentrant sur les relations entre la finance comportementale, la méthodologie PM², la littératie financière, l’environnement des affaires et le succès des investissements des entrepreneurs ethniques. Le chapitre a examiné chaque hypothèse principale et ses sous-composantes en détail, intégrant les résultats quantitatifs avec les perspectives théoriques et la littérature pertinente afin de contextualiser les résultats.

L’analyse a confirmé que la finance comportementale (BF) exerce un impact négatif significatif sur le succès des investissements, principalement à travers les effets des heuristiques

(optimisme, excès de confiance, représentativité) et de la théorie des perspectives (aversion au regret/perte, cadrage, comptabilité mentale). Ces biais altèrent la prise de décision, entraînant des performances sous-optimales, une satisfaction réduite, une durabilité limitée, une adaptabilité compromise et des résultats sociaux moins favorables. En revanche, le facteur « conditions de marché » et ses sous-composantes (comportement de troupeau, tendances passées et informations de marché) n'ont pas influencé de manière significative le succès des investissements, ce qui suggère que les entrepreneurs ethniques s'appuient davantage sur des processus cognitifs internes et des approches méthodologiques que sur les signaux externes du marché.

Le chapitre a également exploré le rôle de médiation et de modération de la méthodologie PM² (H4), montrant qu'elle médie partiellement et module la relation entre BF et le succès des investissements. La gestion agile et la gestion de programme ont atténué de manière significative les effets négatifs des biais cognitifs, tandis que la gestion de portefeuille n'a pas été significative. De même, la littératie financière (H5) a modéré positivement la relation BF–succès des investissements, toutes ses sous-composantes, compétence, professionnalisme et sens de l'opportunité, renforçant la capacité des entrepreneurs à prendre des décisions rationnelles et éclairées. Concernant l'environnement des affaires (H6), l'effet modérateur global a été rejeté, bien que les facteurs écologiques aient montré une influence modératrice significative, tandis que les facteurs macro- et microéconomiques n'étaient pas significatifs. Enfin, les variables démographiques ont été abordées. Tous les facteurs, à l'exception de la maîtrise de la langue, n'ont montré aucun effet significatif, indiquant qu'ils n'influençaient pas de manière notable les tendances en matière de finance comportementale, l'adoption de la méthodologie PM² ni la réussite des investissements dans l'entrepreneuriat ethnique.

Dans l'ensemble, le chapitre 6 a synthétisé les résultats empiriques, fournissant des interprétations théoriques et pratiques de la manière dont les biais cognitifs, les pratiques méthodologiques, les compétences individuelles et les facteurs contextuels interagissent pour façonner le succès des investissements des entrepreneurs ethniques. Ce chapitre prépare le terrain pour le chapitre 7, qui portera sur les contributions de la recherche, ses limites et les orientations pour les études futures.

CHAPTER 7: COCONCLUSIONS, RESEARCH CONTRIBUTIONS, LIMITATIONS, AND FUTURE DIRECTIONSUSION

This chapter concludes the study by synthesizing the main findings, discussing their theoretical and practical implications, acknowledging the study's limitations, and outlining directions for future research. The primary aim of the research was to examine how behavioral finance biases, moderated or mediated by PM² methodology, financial literacy, and business environment, influence the investment success of ethnic entrepreneurs.

The previous chapters (Chapters 5 and 6) presented the detailed data analysis, including quantitative and qualitative results, as well as interpretation of findings in light of behavioral finance theory, self-determination principles, and entrepreneurial decision-making literature. Chapter 7 builds on this foundation to provide an integrated overview of key results, highlighting the significance of cognitive biases, methodological interventions, financial knowledge, and contextual factors in shaping entrepreneurial outcomes.

The chapter is organized as follows: Section 7.1 summarizes the key findings of the study, linking each hypothesis and subcomponent to observed results. Section 7.2 presents theoretical contributions, while Section 7.3 discusses practical implications for entrepreneurs, managers, and policymakers. Section 7.4 acknowledges the limitations of the study, and Section 7.5 outlines avenues for future research. The chapter concludes in Section 7.6 with overarching conclusions and the main takeaways of the research.

7.1. Summary of Key Findings

This section provides a concise synthesis of the study's main findings, emphasizing the overall effects of the key variables on ethnic entrepreneurs' investment success, without repeating the detailed analyses from previous chapters. The aim is to present an integrated overview that sets the stage for discussing theoretical and practical implications.

The study confirms that Behavioral Finance (BF) has a significant negative effect on the investment success of ethnic entrepreneurs. Cognitive biases, particularly those related to heuristics (optimism, overconfidence, representativeness) and prospect theory (regret and loss

aversion, framing, mental accounting), distort decision-making, reduce performance, and impair sustainability, adaptability, satisfaction, and social outcomes. In contrast, market conditions, including herding behavior, past trends, and market information, do not significantly influence investment outcomes, suggesting that ethnic entrepreneurs rely more on internal judgment and methodological approaches than on external signals.

The study also demonstrates that PM² methodology plays a crucial moderated-mediation role between BF and investment success. Its subcomponents, agile management and program management, effectively channel behavioral influences into structured decision-making processes, mitigating the negative impact of cognitive biases, while portfolio management alone does not significantly contribute.

Additionally, financial literacy positively moderates the relationship between BF and investment success, with all subcomponents, competency, professionalism, and opportunity, enhancing entrepreneurs' ability to counteract biases and improve investment outcomes. Conversely, the overall business environment does not moderate the relationship, except for ecological factors, which show a positive moderating effect, while macroeconomic and microeconomic factors remain insignificant.

Finally, demographic characteristics (gender, age, education, residency) showed minimal influences on investment success and behavioral tendencies. Gender, age, education, and residency did not significantly affect behavioral biases, PM² usage, or performance, while language fluency remained the only notable factor.

In summary, ethnic entrepreneurs' investment success is primarily determined by internal cognitive and methodological factors rather than external market conditions. Structured management practices and financial literacy provide effective mechanisms to mitigate behavioral biases, while ecological aspects of the business environment offer additional, albeit limited, support. This integrated understanding forms the basis for discussing theoretical contributions, practical implications, and future research directions in the subsequent sections.

7.2. Theoretical Contributions

This study makes several significant contributions to the theory of entrepreneurship, behavioral finance, and project management by investigating the interplay between cognitive

biases, structured methodology, and ethnic entrepreneurs' investment success. By integrating behavioral finance theory, self-determination principles, and PM² methodology within an ethnic entrepreneurial context, this research extends current knowledge in multiple ways.

7.2.1. Advancing Behavioral Finance Theory in Ethnic Entrepreneurship

First, this study provides robust empirical evidence that behavioral finance biases significantly and negatively affect investment success among ethnic entrepreneurs. While the general association between cognitive biases and suboptimal decision-making has been widely validated in traditional investor contexts (Kahneman & Tversky, 1979; Simon, 1957; Barber & Odean, 2001), this research extends behavioral finance theory into the domain of ethnic entrepreneurship, an environment characterized by hybrid decision structures, informal financial systems, and culturally embedded reasoning patterns. By doing so, it expands the theoretical boundary of behavioral finance from individual investors to small business owners who operate under socio-cultural and institutional constraints.

Second, the study disentangles the internal structure of heuristics, revealing that optimism, overconfidence, and representativeness exert a particularly strong negative influence on investment outcomes, whereas availability and anchoring demonstrate more context-dependent effects. This nuanced differentiation contributes to theory by suggesting that not all heuristics are equally detrimental; rather, their impact depends on the entrepreneurial context, level of uncertainty, and cultural value orientation. These findings enrich the theoretical dialogue on bounded rationality (Simon, 1957) by highlighting that cognitive shortcuts among ethnic entrepreneurs are shaped by their social identity, prior migration experiences, and interaction with ethnic networks.

Similarly, the confirmation of prospect theory components, regret and loss aversion, framing, and mental accounting, as significant determinants of entrepreneurial performance advances understanding of how emotional and cognitive distortions interact within business decision-making. The results suggest that ethnic entrepreneurs' investment behaviors are guided not merely by expected utility or market logic but by affective and cognitive framing mechanisms rooted in past experiences and socio-cultural narratives. This contributes theoretically by bridging

prospect theory with entrepreneurial cognition literature, showing that emotion-laden decision frames can systematically influence strategic outcomes in venture creation and growth.

The non-significant role of market condition variables, including herding behavior, past trends, and market information, further challenges the universal applicability of classical market efficiency models (Fama, 1970; Markowitz, 1952). Instead, it underscores that ethnic entrepreneurs' investment decisions are primarily governed by internal cognitive mechanisms and socially mediated heuristics, rather than by objective external market cues. This observation supports emerging behavioral finance perspectives emphasizing contextual boundedness and situational rationality.

Overall, the study refines and extends behavioral finance theory by demonstrating that the strength, salience, and manifestation of cognitive biases vary according to cultural context, institutional embeddedness, and entrepreneurial environment. It calls for a contextualized behavioral finance framework, one that integrates cultural cognition, social capital, and migration experience into models of financial and investment behavior. This theoretical expansion enhances our understanding of decision-making in pluralistic economies and opens avenues for developing cross-cultural behavioral finance models tailored to diverse entrepreneurial ecosystems.

7.2.2. Integration of PM² Methodology as a Mediating and Moderating Mechanism

This study advances both behavioral finance and project management theory by conceptualizing and empirically validating the PM² methodology as a dual mechanism, serving simultaneously as a mediator and a moderator, in the relationship between behavioral biases and investment success. The findings demonstrate that structured project management practices not only mediate the translation of cognitive biases into decision outcomes by providing systematic frameworks for planning, monitoring, and evaluation, but also moderate the intensity of behavioral distortions by embedding rational checkpoints and feedback loops that constrain impulsive or affect-driven actions.

Specifically, the evidence that Agile Management and Program Management effectively transform biased decision-making into structured, goal-oriented processes substantiates the view that adaptive and iterative management systems enhance cognitive discipline. These frameworks help entrepreneurs translate intuition and emotion into actionable strategies through planning

cycles, performance measurement, and cross-functional coordination, mechanisms long emphasized in the project management literature as foundations for decision rationality and performance resilience (Turner & Zolin, 2012; PMI, 2017). The finding that Portfolio Management did not significantly affect this relationship introduces an important nuance: structural tools alone do not mitigate biases unless they are coupled with active monitoring, prioritization, and strategic alignment. This insight enriches project governance theory by suggesting that behavioral control emerges not from formalization per se but from dynamic managerial engagement within structured systems.

From a theoretical standpoint, the integration of PM² into behavioral finance models contributes to a growing recognition that cognitive biases can be managed, not merely observed, through methodological interventions. By demonstrating moderated mediation, the study provides a novel cross-disciplinary bridge, showing that process discipline and cognitive framing mechanisms jointly influence entrepreneurial performance. This integration operationalizes the notion that rationality is procedural rather than absolute (Simon, 1978), meaning that structured decision systems like PM² can transform bounded rationality into effective strategic behavior.

Furthermore, by positioning PM² as both a behavioral corrective and a performance enabler, the study extends entrepreneurial cognition theory, which typically focuses on mental models and heuristics, toward a behavioral operations perspective that accounts for process-driven learning and adaptive control. This reconceptualization highlights that methodological structure is not merely administrative but cognitively instrumental, enabling entrepreneurs to counteract overconfidence, optimism, and framing biases through systematic reflection, iteration, and evidence-based decision-making.

Overall, this contribution bridges behavioral finance and project management literatures by showing that methodological rigor functions as a behavioral stabilizer, transforming cognitive limitations into structured problem-solving processes. It thereby enriches theoretical understanding of how decision-making systems like PM² can serve as behavioral governance mechanisms, ensuring that entrepreneurial action remains aligned with rational, goal-oriented, and sustainable investment strategies.

7.2.3. Role of Financial Literacy as a Positive Moderator

This study advances behavioral finance and entrepreneurship theory by establishing financial literacy as a significant positive moderator that mitigates the adverse effects of cognitive and emotional biases on investment success. Empirical results demonstrate that the three subcomponents, competency, professionalism, and opportunity, jointly enhance entrepreneurs' ability to recognize, interpret, and correct biased decision patterns. Financial literacy thus operates as a behavioral control mechanism, transforming intuitive or emotionally driven responses into more informed, rational, and strategic financial behaviors.

The findings extend existing scholarship (Lusardi & Mitchell, 2014; Klapper et al., 2015) by demonstrating that financial literacy does not merely act as a standalone determinant of success but rather functions interactively with behavioral biases. Specifically, financially literate entrepreneurs exhibit stronger resistance to heuristic distortions such as overconfidence, optimism, and anchoring, and display greater capacity to apply risk assessment and portfolio evaluation tools that counteract the emotional elements of prospect theory, such as loss aversion and mental accounting. This moderating effect confirms that cognitive awareness and technical knowledge can temper irrational tendencies, aligning entrepreneurial decisions with rational choice principles.

From a theoretical standpoint, these results refine behavioral finance theory by illustrating how knowledge-based resources serve as moderators of bounded rationality. Whereas prior models often conceptualize biases as fixed psychological limitations, this study demonstrates that their impact is malleable, subject to reduction through education, training, and financial exposure. In doing so, it integrates the resource-based view (RBV) with behavioral finance perspectives, suggesting that financial literacy constitutes a strategic intangible asset that enhances decision quality, adaptability, and long-term sustainability.

Furthermore, by situating financial literacy within the ethnic entrepreneurship context, the study contributes to cross-cultural behavioral finance literature, revealing how access to financial information, institutional knowledge, and professional support networks can attenuate structural disadvantages. The dimension of opportunity, access to financial services and tools, emerges as particularly important, showing that literacy's benefits depend not only on personal competence but also on the institutional environment that enables practical application.

Overall, the study enriches theoretical understanding of entrepreneurial decision-making by positioning financial literacy as both a behavioral moderator and a capacity-building mechanism. It underscores that improving financial education and access can systematically reduce cognitive distortions, bridge informational asymmetries, and promote rational, evidence-based investment practices among ethnic entrepreneurs.

7.2.4. Precise Understanding of Business Environment

This study makes an important theoretical contribution by refining the understanding of how the business environment interacts with behavioral finance mechanisms in shaping ethnic entrepreneurs' investment success. While macroeconomic and microeconomic factors did not significantly moderate the relationship between behavioral biases and investment outcomes, ecological factors, encompassing environmental stability, community embeddedness, and institutional accessibility, exhibited a positive moderating effect. This finding underscores that entrepreneurs' decision-making is not only a cognitive process but also deeply embedded within localized, relational, and ecological contexts.

By revealing that traditional macro- and microeconomic indicators (e.g., inflation, interest rates, market competition) have limited influence in this context, the study challenges the universalist assumptions of classical economic and market-based theories (Fama, 1970; Porter, 1980). Instead, it aligns with the institutional theory (North, 1990) and the embeddedness perspective (Granovetter, 1985), suggesting that ethnic entrepreneurs' behavior is conditioned more by the social and ecological environments in which their ventures are rooted than by broader economic trends. The moderating role of ecological factors highlights how environmental stability, cultural networks, and access to local resources can buffer the adverse effects of cognitive biases, supporting more consistent and adaptive decision-making.

Theoretically, this nuanced differentiation expands the behavioral finance framework by introducing contextual moderators that shape how psychological biases translate into economic outcomes. It illustrates that bounded rationality (Simon, 1957) operates not in isolation but within structured ecosystems that can either amplify or attenuate bias effects. In particular, ecological and community-specific dynamics, such as shared trust, informal information exchange, and cultural norms, emerge as mechanisms that enhance resilience against biased judgments and foster

sustainable investment behavior. Moreover, by integrating ecological systems thinking with entrepreneurial cognition, the study contributes a novel theoretical synthesis: decision-making effectiveness depends on the interaction between individual cognitive limitations and environmental enablers. This reorientation advances behavioral and entrepreneurial theory toward a more context-sensitive paradigm, recognizing that rationality is not universal but situationally bounded within socio-ecological systems.

Overall, the findings enrich the conceptualization of the business environment as a dynamic moderator, one that operates less through economic signals and more through ecological embeddedness, institutional trust, and community cohesion, offering a more precise and contextually grounded understanding of entrepreneurial behavior in ethnic markets.

7.2.5. Incorporation of Ethnic Entrepreneurial Context

Finally, this study makes a substantial contribution to the field of ethnic entrepreneurship by elucidating how cultural orientation, community embeddedness, and demographic characteristics jointly shape investment success. It demonstrates that entrepreneurial cognition and behavior are inseparable from the socio-cultural contexts in which they occur. Findings on gender, education, language proficiency, and residency status reveal that demographic factors influence both the susceptibility to behavioral finance biases and the efficacy of methodological approaches such as PM². For instance, entrepreneurs with higher educational attainment and stronger language fluency showed greater analytical capability, enabling them to mitigate heuristics and prospect theory biases while effectively applying structured project management techniques. In contrast, those facing linguistic or institutional barriers exhibited higher cognitive distortions and lower business performance, reflecting the persistent influence of structural and cultural constraints.

These insights extend the behavioral finance framework by incorporating social capital theory (Coleman, 1988) and the embeddedness perspective (Granovetter, 1985), showing that decision rationality is not purely individual but socially constructed within ethnic networks. They also connect to the resource-based view (Barney, 1991), suggesting that education, linguistic proficiency, and community ties act as intangible assets that enhance entrepreneurial resilience and decision quality.

By situating behavioral finance within an ethnic and cultural context, this study provides a contextually grounded theoretical synthesis that bridges micro-level cognitive processes with macro-level social and institutional structures. It advances understanding of how bounded rationality interacts with cultural norms, identity, and network-based learning, producing distinct decision-making patterns among ethnic entrepreneurs. In summary, the theoretical contributions of this study are:

- Refining behavioral finance theory in ethnic entrepreneurial contexts by identifying which biases and subcomponents significantly affect investment success.
- Demonstrating the dual moderated-mediation role of PM² methodology as a mechanism to mitigate behavioral biases.
- Establishing financial literacy as a positive moderator that strengthens rational decision-making under bias.
- Highlighting the conditional role of ecological factors within the business environment.
- Integrating demographic and community-specific characteristics into behavioral and methodological frameworks, providing a holistic understanding of ethnic entrepreneurial investment success.

Collectively, these contributions advance theory at the intersection of behavioral finance, entrepreneurship, and project management, providing a unique, contextually grounded, and empirically supported framework for understanding and improving ethnic entrepreneurs' investment outcomes.

7.2.6. Proposed Theoretical Model: The Behavioral-Methodological Integration Model (BMIM)

Building on the theoretical and empirical findings of this study, a new conceptual framework, the Behavioral-Methodological Integration Model (BMIM), is proposed to explain how behavioral, methodological, financial, and contextual factors interact to shape the investment success of ethnic entrepreneurs. The BMIM suggests that investment outcomes are not determined solely by rational or market-driven forces, but rather by the dynamic interplay between behavioral finance biases, structured methodological practices (PM²), financial literacy, and the business and

socio-cultural environment in which entrepreneurs operate. At its core, the model posits that behavioral biases, including heuristics, prospect theory effects, and limited responsiveness to market conditions, exert a negative influence on entrepreneurial investment success by distorting judgment, risk perception, and decision-making.

However, this relationship is both mediated and moderated by the use of structured management methodologies, particularly the PM² framework. Through its components, Agile Management, Program Management, and Portfolio Management, PM² provides cognitive discipline, planning structure, and decision rigor, transforming potentially biased or intuitive judgments into more analytical, data-driven, and goal-oriented processes. This methodological rigor acts as an internal corrective mechanism that channels behavioral tendencies toward more consistent and sustainable investment decisions. Complementing this, financial literacy operates as a positive moderator, enhancing entrepreneurs' capacity to recognize and counteract behavioral distortions. Competency, professionalism, and opportunity dimensions of financial literacy collectively strengthen rational evaluation and informed decision-making, empowering entrepreneurs to interpret financial information accurately, manage risk, and leverage opportunities effectively.

The business environment and demographic context serve as external moderators, shaping how internal behavioral and methodological processes translate into investment outcomes. While traditional macro- and microeconomic conditions did not significantly alter these relationships, ecological and community-specific factors, such as local market embeddedness, social capital, and community norms, were shown to influence the extent to which behavioral biases and management practices affect success. However, among the demographic variables, only language proficiency influences the effectiveness of methodological acceptance and bias reduction. Entrepreneurs with stronger language skills, for example, demonstrate a greater ability to apply structured methods and minimize cognitive distortions. Other variables, such as age, gender, education, and residency status, do not exhibit significant effects on these relationships.

In essence, the BMIM advances a multidimensional understanding of ethnic entrepreneurial decision-making, integrating behavioral finance theory, project management methodology, and contextual entrepreneurship perspectives into a unified explanatory framework. It proposes that entrepreneurial success emerges from the interaction between cognition, structure, and context,

where behavioral biases are ever-present but can be regulated through methodological discipline, informed by financial literacy, and shaped by environmental and demographic conditions. The model therefore extends the boundaries of behavioral finance theory from individual-level decision-making to community-embedded entrepreneurial contexts, offering a new theoretical lens to understand and enhance investment success among ethnic entrepreneurs.

Building upon these theoretical contributions, this study proposes an integrative conceptual framework (Figure 27) the Behavioral-Methodological Integration Model (BMIM), that unifies the behavioral, methodological, cognitive, and contextual dimensions identified throughout the research. The model synthesizes how behavioral finance biases interact with structured project management methodologies, financial literacy, and environmental and demographic factors to shape entrepreneurial investment outcomes. By capturing these multidirectional relationships, the BMIM offers a comprehensive theoretical lens through which to understand and enhance the investment success of ethnic entrepreneurs operating in complex socio-economic environments.

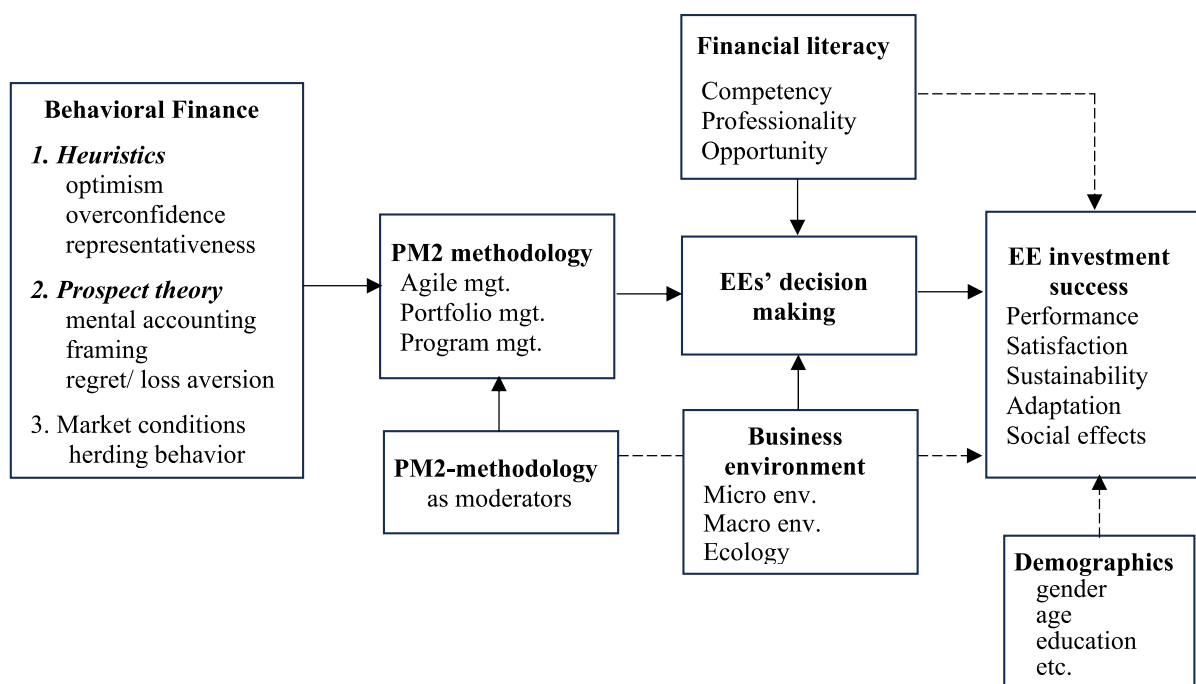


FIGURE 27. STUDY'S PROPOSES AN INTEGRATIVE CONCEPTUAL FRAMEWORK

Source: the researcher

7.3. Practical Implications

The findings of this study provide several actionable insights for ethnic entrepreneurs, policymakers, business support organizations, and educators. By linking behavioral finance biases, structured project management methodologies, financial literacy, and contextual factors to investment success, the study generates clear strategies to improve entrepreneurial outcomes and promote more resilient, adaptive, and socially embedded entrepreneurial ecosystems.

7.3.1. Implications for Ethnic Entrepreneurs

The results emphasize the critical importance of self-awareness and behavioral discipline among ethnic entrepreneurs. Understanding that optimism, overconfidence, and representativeness biases can distort perceptions of opportunity and risk is essential for improving investment outcomes. In this regard, practical strategies include:

- Implementing decision-checking mechanisms such as scenario analysis, feasibility assessments, and peer or mentor reviews to counteract overconfidence and over-optimism.
- Engaging in structured reflection and feedback loops, encouraging entrepreneurs to critically question their own assumptions and compare decisions with objective performance data.
- Maintaining a “decision logbook” that records rationale, expectations, and outcomes of key business decisions, enabling more data-driven calibration over time.
- Encouraging collective learning within ethnic business networks, where shared experiences and case-based reflection help individuals recognize recurring cognitive traps.

These measures empower entrepreneurs to make more evidence-based, emotionally balanced, and context-aware investment choices. Ultimately, cultivating behavioral self-regulation becomes a strategic capability that enhances sustainability, adaptability, and long-term success.

7.3.2. Adoption of PM² Methodology

The study demonstrates that PM² methodology, particularly its agile and program management components, effectively mediates and moderates the negative effects of behavioral biases. Ethnic entrepreneurs can benefit by:

- Applying agile management techniques to foster flexibility and rapid response to changing conditions, mitigating overconfidence in static plans and promoting iterative learning.

- Integrating program management frameworks to coordinate multiple ventures, track performance metrics, and ensure strategic alignment across business activities.
- Recognizing that portfolio management alone is insufficient, unless it is combined with adaptive and collaborative processes that actively engage teams and stakeholders.

Practical implementation can be facilitated through training workshops, incubator programs, or consulting interventions that translate the PM² framework into accessible templates and decision tools for small business contexts. Such initiatives can build entrepreneurs' capacity to convert intuition-driven choices into structured, evidence-informed decisions, bridging the gap between behavioral tendencies and rational project execution.

7.3.3. Strengthening Financial Literacy

Financial literacy emerged as a pivotal moderating factor that enables entrepreneurs to neutralize behavioral biases and enhance investment performance. Ethnic entrepreneurs should strengthen three dimensions of financial literacy:

- *Financial knowledge*: mastering accounting principles, cash flow management, and risk-return evaluation etc.
- *Professional skills*: using analytical tools such as break-even analysis, discounted cash flow, or ROI assessments to guide investment decisions.
- *Opportunity recognition*: balancing optimism with realistic assessment of market viability, competition, and risk exposure.

Business incubators, community organizations, and local chambers of commerce can offer modular, experiential financial literacy programs that blend theory with practice, such as simulations, case studies, and mentorship. Embedding financial literacy training within broader entrepreneurship curricula helps cultivate a culture of financial prudence and strategic foresight, essential for long-term sustainability.

7.3.4. Considering the Business Environment

The findings reveal that ecological and community-specific factors, rather than broad macroeconomic or microeconomic variables, significantly influence entrepreneurial outcomes. This implies that ethnic entrepreneurs should:

- Adapt strategies to local realities, aligning product offerings, pricing, and marketing with community needs and socio-cultural expectations.
- Leverage local networks and informal institutions to access information, resources, and trust-based financing that mitigate market uncertainty.
- Incorporate sustainability and ecological awareness into business planning, recognizing environmental stewardship as both an ethical and economic asset.

For policymakers and business support agencies, this means prioritizing localized business development policies, improving infrastructure and access to environmental data, and facilitating ecosystem partnerships that enhance community-level resilience and learning. In doing so, the ecosystem becomes not only an economic support system but also a social anchor for entrepreneurial stability.

7.3.5. Integrating Demographic Considerations

Demographic characteristics play a subtle role in shaping entrepreneurial cognition and methodological adoption. The findings indicate that only language proficiency meaningfully influences the degree of behavioral bias reduction and the capacity to apply structured management practices, while education, gender, residency status, and age do not show significant effects. Therefore, the recommendations in this regard are:

- Strengthening language-focused training and mentorship, ensuring that entrepreneurs with lower fluency receive targeted support to better understand financial information and apply PM² methodology effectively.
- Simplifying instructional materials and providing multilingual resources to enhance comprehension, reduce cognitive overload, and facilitate equal access to project management tools and decision-making frameworks.
- Designing inclusive capacity-building programs that are applicable across demographic groups, since factors such as age, gender, education, and residency status do not meaningfully alter behavioral tendencies or methodological adoption.
- Emphasizing experiential learning and practical competence, ensuring that skill development—not demographic background—guides entrepreneurial support strategies.

7.3.6. Implications for Policy and Entrepreneurial Support

For policymakers and ecosystem developers, the study underscores the importance of designing integrative support systems that align behavioral, educational, and methodological dimensions. Policy initiatives should aim to:

- Promote comprehensive entrepreneurship programs that combine behavioral awareness, financial literacy, and project management training under a unified curriculum.
- Facilitate access to localized market intelligence and ecological resources, supporting evidence-based, context-sensitive decision-making.
- Foster mentorship and peer-learning networks that translate theory into action, helping entrepreneurs internalize rational decision processes through experience.
- Incentivize sustainable business practices and inclusive financial systems that reward long-term stability over speculative short-termism.

Such policy frameworks can cultivate behaviorally informed entrepreneurship ecosystems, reducing systemic inefficiencies caused by cognitive biases and promoting equitable, resilient business development among ethnic communities.

In summary, this research provides actionable guidance for multiple stakeholders—ethnic entrepreneurs, educators, business support agencies, and policymakers. By addressing behavioral biases, enhancing methodological and financial skills, and leveraging contextual awareness, these actors can jointly improve investment success, sustainability, adaptability, satisfaction, and social impact. Collectively, these practical implications extend beyond individual entrepreneurial performance to foster smarter, more equitable, and behaviorally resilient entrepreneurship ecosystems that empower ethnic entrepreneurs to thrive in dynamic environments.

These practical implications directly operationalize the Behavioral-Methodological Integration Model (BMIM) proposed in this study. By addressing behavioral finance biases, promoting structured PM² methodology adoption, strengthening financial literacy, and considering contextual and demographic factors, the BMIM framework provides a comprehensive roadmap for improving investment outcomes among ethnic entrepreneurs. Each recommendation—whether enhancing self-awareness of cognitive biases, implementing agile and program management practices, or tailoring training to linguistic and educational needs—reflects a specific leverage point within the model, translating theoretical insights into actionable strategies. In this way, the

BMIM framework not only explains how behavioral, methodological, and contextual factors interact to shape investment success but also guides entrepreneurs, policymakers, and support organizations in designing interventions that systematically enhance decision-making quality, sustainability, adaptability, and social impact.

7.4. Limitations and Directions for Future Research

Despite the comprehensive design and rigorous analyses employed in this study, certain limitations must be acknowledged. Recognizing these constraints is essential not only for contextualizing the findings but also for guiding subsequent research efforts. This study provides valuable insights into the interplay between behavioral finance biases, PM² methodology, financial literacy, business environment, and ethnic entrepreneurs' investment success; however, its scope, methodology, and contextual focus introduce boundaries that may affect generalizability, causal inference, and the breadth of theoretical application. By identifying these limitations, future studies can build upon the current research to deepen understanding, test the robustness of the proposed frameworks, and extend their applicability across diverse entrepreneurial contexts. The following subsections elaborate on key limitations and propose avenues for future research.

7.4.1. Sample and Contextual Limitations

The study focused on ethnic entrepreneurs operating primarily in Montreal and surrounding regions in Québec. While this localization enabled an in-depth exploration of cultural, social, and structural factors affecting investment decision-making, it inherently constrains the generalizability of the findings. Ethnic entrepreneurs in other regions or countries may face different financial systems, regulatory frameworks, market structures, and cultural norms, which could influence the manifestation of heuristics, prospect theory biases, and market-driven decision tendencies. Moreover, access to project management resources, financial literacy programs, and community networks may differ substantially across geographic contexts, potentially altering the efficacy of PM² methodology and bias mitigation strategies.

Future research could extend this study by examining ethnic entrepreneurs in varied cultural and geographic environments, including regions with distinct economic development levels, regulatory landscapes, or social support infrastructures. Comparative studies across countries or cities could reveal cross-cultural variations in the strength and types of behavioral biases, the

adoption of structured management practices, and the moderating effects of financial literacy and environmental factors. Also, research focusing on underrepresented ethnic groups or niche entrepreneurial sectors could provide further nuance, enabling scholars to refine behavioral finance and entrepreneurial models for diverse populations.

Additionally, the sample size of 183 respondents, while sufficient for PLS-SEM analysis and exploratory insights, represents a moderate number for making broader inferences across the ethnic entrepreneurial population in Québec or beyond. A larger sample could improve statistical power, reduce the margin of error, and enable more nuanced subgroup analyses, such as interactions across different industries, regions, or ethnic groups. Future research could replicate this study with larger samples to validate the observed relationships and enhance the robustness and generalizability of the results.

7.4.2. Cross-Sectional Design

This study employed a cross-sectional design, capturing data at a single point in time. While this approach allowed for the identification of significant relationships among behavioral finance biases, PM² methodology, financial literacy, business environment, and investment success, it limits the ability to establish causality or observe dynamic changes over time. Cross-sectional data provides a snapshot of associations but cannot account for temporal fluctuations in entrepreneurial decision-making, investment performance, or the evolution of cognitive biases as entrepreneurs gain experience.

Longitudinal research designs could significantly enhance understanding in this area by tracking how behavioral biases, methodological adoption, and contextual factors influence investment success across the lifecycle of entrepreneurial ventures. For instance, repeated measures could reveal whether interventions in financial literacy or project management practices produce sustained improvements in decision-making quality and investment outcomes. Additionally, longitudinal studies could explore how ethnic entrepreneurs adapt their cognitive and methodological approaches in response to shifting market conditions, regulatory changes, or evolving community networks.

Future research could also combine cross-sectional and longitudinal methods in a mixed-methods sequential design, integrating quantitative tracking over time with qualitative insights

from interviews or observations. Such approaches would provide a more comprehensive understanding of causal mechanisms and temporal dynamics, ultimately strengthening both theoretical development and practical guidance for supporting ethnic entrepreneurs.

7.4.3. Self-Reported Measures

Most variables in this study, including behavioral finance tendencies, adoption of PM² methodology, financial literacy, and perceived investment success, were measured using self-reported survey instruments. While these instruments were carefully validated and widely used in prior research, self-reported data are inherently susceptible to biases, including social desirability, recall inaccuracies, and subjective interpretation. Participants may overstate positive behaviors, underreport cognitive biases, or evaluate investment outcomes in ways that reflect personal perceptions rather than objective reality. Consequently, the reliance on self-reported measures may introduce measurement error and limit the precision of the observed relationships.

To address these limitations, future research could incorporate objective performance metrics, such as financial returns, revenue growth, profitability, or operational efficiency, alongside self-assessments. This would provide a more robust and triangulated view of entrepreneurial success, reducing the risk of perceptual distortions affecting findings. Additionally, combining survey data with qualitative methods, such as semi-structured interviews, ethnographic observations, or case studies, could enrich the understanding of how behavioral biases and methodological practices manifest in real-world decision-making. Archival data, such as business registration records, financial statements, or transaction logs, could also serve as complementary sources to validate self-reported outcomes.

Furthermore, employing multi-source data collection, such as input from business partners, mentors, or advisors, could provide additional checks on self-reported behaviors and outcomes. Such methodological triangulation would strengthen the internal validity of research findings and offer more precise insights into the mechanisms through which behavioral finance biases, PM² methodology, and financial literacy interact to shape investment success. By addressing the limitations of self-reporting, future studies can generate more accurate, generalizable, and actionable evidence for both researchers and practitioners in ethnic entrepreneurship contexts.

7.4.4. Scope of Behavioral Finance Components

This study focused on three primary components of behavioral finance, heuristics, prospect theory, and market conditions, to investigate their impact on the investment success of ethnic entrepreneurs. While this scope allowed for a clear and structured analysis, it inevitably leaves out other important behavioral and psychological factors that may influence decision-making. Behavioral finance literature identifies a wider array of biases, including confirmation bias, overreaction, regret aversion beyond prospect theory, mental accounting nuances, emotional influences, mood effects, loss framing, and social comparison, which may also significantly shape entrepreneurial choices.

Limiting the analysis to the selected components may have overlooked interactions or compounding effects that occur between these and other biases. For example, emotions like fear or excitement may intensify overconfidence or loss aversion, while social comparisons with peers may amplify herding behaviors beyond market conditions. These subtler dynamics can meaningfully alter decision-making processes, investment strategies, and ultimately business performance.

Future research could expand the behavioral finance framework to include a broader spectrum of cognitive and emotional biases, examining how they interact with project management methodologies, financial literacy, and contextual factors such as community networks or localized business environments. Additionally, investigating the relative magnitude and conditional effects of each bias would provide deeper insights into which tendencies most strongly hinder or enhance investment outcomes among ethnic entrepreneurs. By broadening the scope of behavioral finance components, future studies could generate a more holistic and nuanced understanding of decision-making mechanisms, leading to improved theoretical models and practical recommendations for managing biases in diverse entrepreneurial settings.

7.4.5. Moderating and Mediating Factors

In this study, PM² methodology, financial literacy, and business environment were examined as key moderating and mediating variables influencing the relationship between behavioral finance biases and investment success. While these factors provided valuable insights, it is important to recognize that entrepreneurial decision-making occurs within a complex ecosystem, and additional

variables may significantly shape outcomes. Factors such as access to capital, social networks, mentoring relationships, regulatory frameworks, technological adoption, and prior entrepreneurial experience could also interact with cognitive biases, either amplifying or mitigating their effects.

For instance, entrepreneurs with strong social networks or mentorship connections may receive guidance that helps counteract overconfidence or framing effects, while those with easier access to capital might be more willing to take calculated risks, offsetting the influence of loss aversion. Similarly, regulatory constraints or opportunities, as well as technological adoption, may enable or limit the practical implementation of structured project management practices like PM².

Future research could integrate these additional moderators and mediators to develop more comprehensive, multi-dimensional models of entrepreneurial decision-making. Such studies could examine not only whether these factors buffer or exacerbate cognitive biases, but also how combinations of structural, individual, and contextual factors jointly influence investment performance. Multi-variable models would enhance the explanatory power of behavioral finance frameworks and offer practical insights for designing targeted interventions, such as tailored mentoring programs, policy support, or technology-enabled decision aids. By expanding the set of mediating and moderating factors, researchers can generate a richer understanding of the mechanisms through which biases affect entrepreneurial outcomes, allowing for more precise recommendations for ethnic entrepreneurs, educators, and policymakers.

7.4.6. Level of Analysis

This study primarily focused on individual-level entrepreneurial decisions, examining how behavioral finance biases, PM² methodology, financial literacy, and business environment influence the investment success of ethnic entrepreneurs. While this approach provides valuable insights into personal cognitive and methodological processes, it may overlook important firm-level and ecosystem-level dynamics that also shape entrepreneurial outcomes.

For example, organizational culture, team-based decision-making, internal governance structures, and resource allocation practices can interact with individual cognitive biases. A highly collaborative firm environment may mitigate the effects of overconfidence or representativeness heuristics, while a rigid or hierarchical organizational structure could exacerbate bias-driven decisions. Similarly, ecosystem-level factors, such as the competitive landscape, industry norms,

institutional support, access to financial institutions, and local market conditions, can amplify or buffer the influence of individual-level behavioral tendencies. Entrepreneurs operating within supportive, resource-rich ecosystems may experience reduced negative impacts of cognitive biases, whereas those in constrained or competitive environments may be more vulnerable to suboptimal decision-making.

Future research could adopt multi-level approaches that integrate individual, firm, and ecosystem perspectives, employing hierarchical or nested models to capture the interactions across these levels. Such analyses would provide a more holistic understanding of entrepreneurial performance, revealing how cognitive biases, methodological practices, and contextual factors operate simultaneously at different layers of influence. By considering multiple levels of analysis, researchers can also identify leverage points for intervention, such as organizational training programs, community-based support initiatives, or policy reforms aimed at strengthening the overall ecosystem.

In sum, expanding the level of analysis beyond the individual allows for a richer and more accurate depiction of entrepreneurial decision-making, enhancing both theoretical understanding and practical guidance for improving investment success in ethnic entrepreneurial ventures.

7.4.7. Recommendations for Methodological Refinement

Although the use of PLS-SEM in this study provided robust analytical capabilities for examining mediation, moderation, and complex relationships among constructs, there remain opportunities to enhance methodological rigor in future research. Incorporating complementary techniques, such as Bayesian estimation, multi-level modeling, or machine learning approaches, could improve the precision of effect estimation and allow for the detection of non-linear relationships or complex interactions that traditional SEM may overlook. Furthermore, experimental or quasi-experimental designs could provide stronger causal evidence, enabling researchers to test interventions aimed at mitigating behavioral biases or enhancing methodological adoption in entrepreneurial decision-making.

Additional methodological refinements could involve triangulating quantitative data with qualitative or observational evidence, such as field experiments, case studies, or archival financial performance metrics. This would not only reduce reliance on self-reported measures but also

enhance the validity and reliability of findings. Expanding the diversity of sampling strategies, including participants from varied cultural, geographic, and industry contexts, would further improve generalizability and capture potential boundary conditions of the observed effects.

In summary, while the present study offers valuable theoretical and practical contributions, recognizing these methodological limitations highlights clear pathways for future research. By incorporating longitudinal designs, multi-level approaches, additional behavioral and contextual factors, objective performance indicators, and advanced analytical techniques, scholars can build upon these findings to provide deeper, more robust, and generalizable insights into how behavioral finance, methodological practices, and environmental conditions jointly shape ethnic entrepreneurial investment success.

7.5. Conclusion

This research offers a holistic lens through which to understand ethnic entrepreneurial investment success, moving beyond traditional financial or management models to embrace the complexity of human cognition, methodological application, and socio-cultural context. At its core, the study highlights that entrepreneurship is not merely about identifying opportunities or executing plans—it is fundamentally a dynamic interplay between the entrepreneur’s mindset, structured approaches, and the environment in which they operate. By integrating behavioral, methodological, and contextual perspectives, the study emphasizes that the path to investment success is shaped as much by internal processes as by external conditions.

A central insight emerging from this work is the interdependent nature of cognitive and methodological mechanisms. Behavioral tendencies, often viewed as limitations or biases, do not exist in isolation—they interact with structured frameworks, financial literacy, and contextual factors in ways that can either amplify risks or foster resilience. In this sense, the study positions the entrepreneur as a “cognitive-systemic actor,” whose decision-making is continuously shaped by feedback loops between perception, reflection, and structured practice. The practical and theoretical significance of this view lies in shifting the focus from blaming biases for suboptimal outcomes toward understanding how these biases can be productively channeled through methodological rigor and knowledge acquisition.

Another key contribution of this research is the recognition of contextual embeddedness. Ethnic entrepreneurs operate within complex networks of culture, community, and localized environmental conditions. Their investment decisions cannot be fully understood through abstract economic models or generalized managerial prescriptions. Instead, success emerges from the alignment of internal decision-making capabilities with the ecological, social, and institutional realities surrounding the entrepreneur. This perspective invites a broader rethinking of entrepreneurship theory, suggesting that models should incorporate the nuanced interactions between personal cognition, structured methods, and situational context rather than relying on one-dimensional predictors of success.

From a broader perspective, the study underscores the transformative potential of integration across disciplines. By bridging behavioral finance, project management, and entrepreneurship literature, the research offers a new conceptual lens that appreciates both human and systemic dimensions of decision-making. It demonstrates that the boundaries between these domains are porous; insights from one area, such as structured PM² practices, can meaningfully mitigate limitations identified in another, like cognitive biases, while being amplified or constrained by environmental and demographic conditions. This integrated approach provides a richer, more practical, and more context-sensitive understanding of entrepreneurial success than single-discipline perspectives can offer.

Finally, the research carries a forward-looking vision for the field. It encourages scholars, practitioners, and policymakers to reconceptualize entrepreneurial support not simply as the provision of information, capital, or formal training, but as an orchestrated alignment of cognitive awareness, methodological skills, and contextual adaptation. By fostering such an alignment, ethnic entrepreneurs, and, by extension, other marginalized or resource-constrained entrepreneurial groups, can navigate uncertainty more effectively, optimize decision-making, and achieve sustainable performance and social impact. In essence, the study invites a paradigm shift: seeing entrepreneurship as a systemic, adaptive, and integrative process, rather than a linear pursuit of opportunity or profit.

In sum, the unique contribution of this research lies not only in its empirical findings but in its conceptual synthesis: entrepreneurship is a living system, where mind, method, and environment co-evolve. This perspective opens new avenues for both research and practice,

offering a framework for understanding and enhancing the complex, dynamic, and deeply human process of creating successful ventures in diverse contexts.

7.6. Chapter 7 Summary

This chapter concluded the study by synthesizing its major findings, highlighting theoretical and practical contributions, addressing its limitations, and outlining directions for future research. Building on the analyses and discussions presented in the previous chapters, it provided a holistic interpretation of how behavioral finance (BF), the PM² project management methodology, financial literacy, and business environment interact to shape the investment success of ethnic entrepreneurs (EEs) in Québec.

The study confirmed that behavioral biases, particularly those related to heuristics and prospect theory, negatively influence investment success by distorting judgment, risk perception, and strategic decision-making. In contrast, the adoption of structured managerial approaches such as PM² and higher levels of financial literacy mitigated these adverse effects, demonstrating that methodological discipline and informed reasoning can compensate for cognitive limitations. The findings also revealed that while the business environment as a whole had limited moderating influence, ecological and sustainability-related factors played a more meaningful role in shaping outcomes. Demographic variables, particularly education and language proficiency, further influenced how entrepreneurs navigated behavioral and contextual challenges.

From a theoretical perspective, the research contributed to extending the behavioral finance framework into the domain of ethnic entrepreneurship, an area that remains underexplored. By integrating cognitive and managerial perspectives, the study advanced a multidimensional model that connects individual-level decision-making with organizational and contextual factors. This synthesis bridged gaps between behavioral economics, project management, and entrepreneurship theory, offering a novel lens for understanding how immigrant and minority entrepreneurs make investment decisions under uncertainty.

From a practical standpoint, the findings provide actionable insights for policymakers, entrepreneurship support organizations, and ethnic business associations. The evidence underscores the importance of training programs that enhance financial literacy, project management capability, and adaptive thinking among ethnic entrepreneurs. Furthermore,

promoting the use of structured methodologies such as PM² can strengthen investment performance, particularly in culturally diverse entrepreneurial ecosystems.

Despite its contributions, the study faced several limitations. The sample size, while sufficient for PLS-SEM, limited the generalizability of the results. The cross-sectional design also constrained causal inference. Future research should therefore employ longitudinal or experimental designs to examine temporal dynamics and causal relationships. Expanding the study to other provinces or national contexts could further validate the conceptual model and account for institutional or cultural variations. Moreover, integrating qualitative longitudinal tracking could provide deeper insights into how behavioral and managerial patterns evolve over time.

In conclusion, this research highlights the central role of cognitive, managerial, and contextual factors in determining entrepreneurial success among ethnic minorities. By adopting a mixed-method approach grounded in pragmatism, it not only advanced theoretical understanding but also offered practical pathways for improving entrepreneurial resilience, methodological discipline, and strategic decision-making in multicultural business environments.

7.7. Résumé du Chapitre 7

Ce chapitre a conclu l'étude en synthétisant ses principaux résultats, en mettant en lumière ses contributions théoriques et pratiques, en reconnaissant ses limites et en proposant des orientations pour de futures recherches. S'appuyant sur les analyses et les discussions présentées dans les chapitres précédents, il a offert une interprétation globale de la manière dont la finance comportementale (BF), la méthodologie de gestion de projet PM², la littératie financière et l'environnement des affaires interagissent pour influencer le succès des investissements des entrepreneurs ethniques (EEs) au Québec.

Les résultats ont confirmé que les biais comportementaux – en particulier ceux liés aux heuristiques et à la théorie des perspectives – exercent un effet négatif significatif sur le succès des investissements, en altérant le jugement, la perception du risque et la prise de décision stratégique. À l'inverse, l'adoption d'approches managériales structurées comme la méthodologie PM², ainsi qu'un niveau élevé de littératie financière, atténuent ces effets négatifs. Cela démontre que la rigueur méthodologique et la rationalité informée peuvent compenser certaines limites cognitives. Les résultats ont également révélé que, bien que l'environnement des affaires dans son ensemble

ait un effet modérateur limité, les facteurs écologiques et liés à la durabilité jouent un rôle plus significatif dans la réussite entrepreneuriale. Les variables démographiques, notamment le niveau d'éducation et la maîtrise linguistique, influencent également la capacité des entrepreneurs à surmonter les défis comportementaux et contextuels.

Sur le plan théorique, cette recherche contribue à étendre le cadre de la finance comportementale au domaine de l'entrepreneuriat ethnique – un champ encore peu exploré. En intégrant les perspectives cognitives et managériales, l'étude propose un modèle multidimensionnel reliant les processus décisionnels individuels aux facteurs organisationnels et contextuels. Cette synthèse comble un vide entre l'économie comportementale, la gestion de projet et la théorie entrepreneuriale, offrant ainsi une nouvelle grille de lecture pour comprendre comment les entrepreneurs issus de minorités culturelles prennent leurs décisions d'investissement en situation d'incertitude.

Sur le plan pratique, les résultats fournissent des orientations concrètes pour les décideurs publics, les organismes d'appui à l'entrepreneuriat et les associations d'affaires ethniques. Ils soulignent l'importance de programmes de formation visant à renforcer la littératie financière, les compétences en gestion de projet et la pensée adaptative des entrepreneurs ethniques. La promotion de méthodologies structurées comme PM² peut contribuer à améliorer la performance des investissements, en particulier dans les écosystèmes entrepreneuriaux multiculturels.

Malgré ses contributions, cette recherche présente certaines limites. La taille de l'échantillon, bien que suffisante pour les analyses PLS-SEM, restreint la généralisation des résultats. Le caractère transversal de l'étude limite également les inférences causales. Des recherches futures pourraient adopter des approches longitudinales ou expérimentales afin d'examiner les dynamiques temporelles et les relations de causalité. L'élargissement de l'étude à d'autres provinces ou contextes nationaux permettrait aussi de valider le modèle conceptuel et de tenir compte des différences institutionnelles ou culturelles. De plus, l'intégration d'un suivi qualitatif longitudinal offrirait une compréhension plus approfondie de l'évolution des comportements et des pratiques managériales au fil du temps.

En conclusion, cette étude met en évidence le rôle central des facteurs cognitifs, managériaux et contextuels dans la réussite entrepreneuriale des minorités ethniques. En adoptant une approche mixte fondée sur le paradigme pragmatique, elle a non seulement enrichi la compréhension

théorique du phénomène, mais aussi proposé des pistes concrètes pour renforcer la résilience, la rigueur méthodologique et la qualité décisionnelle des entrepreneurs évoluant dans des environnements économiques multiculturels.

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APPENDICES

Appendix A: Consent Form for Interview

(English version)¹

Thank you for accepting to participate in this study, which will take place from April 2024 to September 2024. This form details the purpose of this study, a description of the involvement required and your rights as a participant.

Subject of the research: Behavioral Finance and Ethnic Entrepreneurship Investment success: A Moderated-Mediation Role of PM² Methodology.

Principal researcher: Ali Salehi, DBA Candidate / administration department/ UQO

The purpose of this study: As part of my thesis project, we are conducting research on the mentioned topic through interviews. We believe that ethnic entrepreneurship differs from general entrepreneurship and usual small businesses in many aspects. So, the factors that affect the EEs decisions are not the same. The main purpose of this research, as a qualitative- exploratory study, is generating knowledge (insights) about ethnic entrepreneurial investment projects by concentrating on socio-psychological factors. We are sure that your cooperation will contribute effectively to create this insight and knowledge. This research is supported by the Université du Québec en Outaouais and guided by Hamed Motaghi Ph.D./ administration department/ UQO.

The questions are about: Ethnic entrepreneurs' characteristics, the approaches through which immigrant investors move towards entrepreneurship, causes and motivations of immigrants in establishing business, the challenges and issues in the business environment, the alternatives that ethnic entrepreneurs may choose in certain situations, the outcomes and consequences of the EE, ethnic entrepreneurial projects success factors, and the factors influence the EEs' decisions. Since this is a qualitative-exploratory study and the data is obtained through a survey, we need your participation as an ethnic entrepreneur from the province of Quebec. Therefore, we hereby request your participation in this project by conducting an interview.

The time, methods, and languages that will be used:

The methods that will be used are one-on-one interview in person/online/by telephone, depending on your choice. The maximum time required for the interview is 30 minutes, which can be done in English or French, as you choose. Note taking is the primary method of data collection, but if you agree, recording can be used for better data extraction. If you feel uncomfortable with the recorder, you may ask that it be turned off at any time.

The risks and benefits of the research:

There are no known risks associated with participating in this research. Additionally, you will have no direct benefit as a participant, other than your contribution to the success of this project and

1. Consent form for interview was presented in both English and French.

receiving a summary of the research results, as well as links to the articles if you are interested. However, your participation in this research will help us in:

- Creating strong insights for decision-making in the EE's investment/ projects
- Better understanding the impact of socio-psychological factors and project management methodology on the EEs' decisions / success
- Identifying the intentions, drivers, approaches, challenges, business alternatives, and success factors in ethnic entrepreneurship investment projects area.

The right for participation and exit the research

Since your business is included an ethnic entrepreneurship in Quebec and falls within the scope of our research population, you can voluntarily participate in the study. So, you do not have to answer all the questions if you do not want to, and you can leave it whenever you want. Also, you are encouraged to ask questions or raise concerns about the nature of the study or the methods the researcher uses at any time. You have the right to withdraw from the study at anytime. In the event you choose to withdraw from the study all information you provide (including tapes) will be destroyed and omitted from the final paper. You can request to remove your data from the study by contacting the researcher, Ali Salehi, or Professor Hamed Motaghi as research director. In addition, the interview is personal, and the results are confidential. The data analysis is done in a general manner and the characteristics of the respondents will not be mentioned individually. Therefore, all information contained in the interview will remain anonymous. Data analysis is done using a coding system so that everything is unknown. Also, no one other than the principal researcher will have access to the data. The data is stored on the server of UQO, which is secure, for 5 years, and is eventually deleted. Special software and devices will be used to remove completely and safely the data and other participant information. It should be noted that this project is approved by the CER of UQO.

Contacting the researcher, research guide and ethics officer

If you have any questions or need more information, please call 5145701359 or email "Sala30@uqo.ca." to Ali Salehi as the researcher or Professor Hamed Motaghi "motaha01@uqo.ca" as research director. You also can contact the head of the CER directly to question about ethical aspects if you need. The email address and phone number are: "Andre.durivage@uqo.ca 819-595-3900 poste 1781".

Consent to participate in the research project:

By signing below, I confirm that:

☐ Yes, you have my permission to use the data and general information of this interview.

☐ No, you do not have my permission to use the data and general information of the interview.

Name of the participant: _____ Date: _____ Signature of the participant: _____

Name of the researcher: _____ Date: _____ Signature of the researcher: _____

Appendix B: Interview Guide for Qualitative Phase

(English version)¹

Purpose and Context

This interview guide was designed to collect qualitative data for the study entitled “*Behavioral Finance and Ethnic Entrepreneurship Investment success: A Moderated-Mediation Role of PM² Methodology.*”

The objective of the interviews was to explore how ethnic entrepreneurs perceive and experience the behavioral, managerial, and contextual factors that influence their investment decisions and business outcomes. The interviews sought to generate insights that would inform the quantitative phase of the research and guide the operationalization of key constructs in the conceptual model.

Interview Format and Instructions

- **Type:** Semi-structured interview
- **Duration:** Approximately 30–45 minutes
- **Mode:** In-person or virtual (depending on participant availability and situation)
- **Language:** English or French, based on participant preference
- **Recording:** Audio recorded with informed consent or note-taking
- **Confidentiality:** All responses are anonymized and treated confidentially. No identifying information is disclosed in the thesis or related publications.
- **Opening Statement:** The interviewer introduces the study, explains its purpose, assures confidentiality, and seeks permission to record the conversation. Participants are reminded that they may withdraw or skip any question at any time.

Section 1: Background Information

(These questions serve to contextualize responses and facilitate understanding of participant profiles.)

1. Could you please tell me a bit about yourself and your business (type of activity, years in operation, number of employees, etc.)?
2. What motivated you to start or invest in this business?
3. How long have you been living in Québec, and what was your professional or entrepreneurial experience before coming here?
4. How would you describe your level of comfort with the local business environment (e.g., regulations, language, networks, financing)?

Section 2: Behavioral Finance Factors

(Exploring cognitive, emotional, and contextual decision-making patterns.)

5. When making investment or business decisions, what kinds of information do you rely on most?

1. The interview guide was presented in both English and French.

6. Do you sometimes make quick decisions based on intuition or experience rather than analysis? Could you give an example? (*Heuristics*)
7. How do emotions such as fear of loss or overconfidence affect your business decisions? (*Prospect Theory*)
8. To what extent do you pay attention to market trends or the behavior of other entrepreneurs when making investment choices? (*Market Conditions*)
9. Looking back, are there decisions you would make differently today? What influenced those earlier decisions?

Section 3: Project Management and PM² Methodology

(Assessing awareness, adoption, and perceived value of PM² principles and practices.)

10. How do you plan and manage your business or investment projects?
11. Do you use any formal or structured management approaches (for example, Agile, PM², or other project management methods)?
12. How do you typically manage risks, timelines, and budgets in your projects?
13. How do teamwork, communication, and adaptability play a role in your project management?
14. Can you recall a project that was particularly successful or unsuccessful? What management factors contributed to that outcome?

Section 4: Financial Literacy

(Assessing knowledge, competence, and attitudes toward financial management.)

15. How confident do you feel in understanding financial information (e.g., balance sheets, financial ratios, investment returns)?
16. How do you make financial decisions for your business? Do you rely on advisors, personal experience, or training?
17. Have you ever taken any training related to financial management, accounting, or investment planning?
18. In your opinion, what are the biggest challenges ethnic entrepreneurs face regarding financial literacy?

Section 5: Business Environment

(Exploring contextual and external influences on business success.)

19. How would you describe the current business environment for entrepreneurs in Québec?
20. What are the key opportunities and challenges you face (e.g., access to funding, bureaucracy, market demand, or competition)?
21. How have recent macroeconomic or ecological factors (e.g., sustainability expectations, digital transition, inflation) affected your business?
22. How does your ethnic or immigrant background influence your access to networks, resources, and opportunities?

Section 6: Investment Success and Adaptation

(Exploring outcomes, perceptions of success, and adaptive strategies.)

23. How do you personally define success in your business or investments?
24. What factors do you think have contributed most to your success so far?

- 25. Have you ever faced a major business failure or challenge? How did you respond or adapt?
- 26. What alternatives would you consider if your current business faced serious difficulties (e.g., partnership, relocation, franchise, or exit)?
- 27. Looking to the future, what are your main goals or aspirations for your business?

Section 7: Closing

- 28. Is there anything else you would like to add about your experience as an ethnic entrepreneur in Québec?
- 29. Do you have any advice or recommendations for new entrepreneurs from immigrant backgrounds?

Thank you very much for your time and valuable insights. Your contribution will help enhance understanding of the entrepreneurial experience in multicultural contexts.

Appendix C: Survey Questionnaire (Quantitative Phase)

English version¹

Dear Sir / Madame

Hello,

As a project management student in the Department of Management at the University of Quebec in Outaouais, in the form of a doctoral thesis, I am conducting research entitled “the impact of behavioral finance on the ethnic entrepreneurial investment projects”. We believe the factors that affect the EEs motivations and decisions are not the same as general entrepreneurship and usual small businesses, but there are differences in various aspects. The main purpose of this research is generating knowledge (insights) about ethnic entrepreneurship by concentrating on socio-psychological factors. Since this is qualitative- exploratory study, and the data is obtained through a survey, we need your participation as an entrepreneur in the province of Quebec by filling out a questionnaire. The questions are about ethnic entrepreneurship, behavioral finance, and project management methodology.

The maximum time required to complete the questionnaire is 20 minutes. This is English version of the questionnaire. There are no known risks associated with participating in this research. Also, there will be no direct benefit to you as a participant, other than your contribution to the success of this project and receiving a summary of the research results, and links of the articles if you interested. Since your business as an ethnic entrepreneurship is within the scope of our research population, you can participate in the study voluntarily. So, you do not have to answer all the questions if you do not want to, and you can leave it whenever you want. Also, you are encouraged to ask questions or raise concerns about the nature of the study or the methods the researcher uses at any time. You can request to remove your data from the study by contacting the researcher, Ali Salehi, or Professor Hamed Motaghi as research director.

You are completely free to fill the attached questionnaire at any time and without prejudice. The questionnaire is personal, and the results are confidential. The data analysis is done in a general manner and the characteristics of the respondents will not be mentioned individually. Therefore, all information contained in the questionnaire will remain anonymous. Data analysis is done using a coding system so that everything is unknown. Also, no one other than the principal researcher will have access to the data. The data is stored on the server of UQO, which is secure, for 5 years, and is eventually deleted. Special software and devices will be used to remove completely and safely the data and other participant information such as consent forms, questionnaires, list of codes etc. It should be noted that this project is approved by the CER of UQO.

If you have any questions or need more information, please call [REDACTED] or email [REDACTED] to Ali Salehi as the researcher or Professor Hamed Motaghi (motaha01@uqo.ca) as research director. You also can contact the head of the CER directly to question about ethical aspects if you need. The email address and phone number are: Andre.durivage@uqo.ca 819-595-3900 poste 1781.

This questionnaire consists of 5 sections, which respectively include demographic information, ethnic entrepreneurship, behavioral finance, project management methodology, and business environment. The demographic information will be used anonymously only for frequency analysis. That is, the researcher analyzes the opinions of entrepreneurs according to demographic characteristics such as gender, age, ethnicity and so on, and no other use of this information will be made.

Please indicate your agreement ☐ / disagreement ☐ by ticking this form, signing questionnaire, or replying to this email as your agreement /disagreement.

Thank you very much for your help in this research.

Ali Salehi

DBA candidate in project management

Department of Administration and Project Management

Université du Québec en Outaouais (UQO)

1. The questionnaire was presented in both English and French.

SECTION 1: DEMOGRAPHIC CHARACTERISTICS

Please tick ☒ the appropriate answer

1. Gender: Man ☐ Woman ☐ I prefer not to answer ☐
2. Age: 20 years and less ☐ 21-30 years ☐ 31-40 years ☐ 41-50 years ☐ More than 51 years ☐
3. What is your native language?
4. Your French level?
Elementary ☐ Pre- intermediate ☐ Intermediate ☐ Upper- intermediate ☐ Advance ☐
5. Your English level?
Elementary ☐ Pre- intermediate ☐ Intermediate ☐ Upper- intermediate ☐ Advance ☐
6. Your level of education?
Primary ☐ Secondary ☐ College (pre-university/ technical training/professional certificates etc.) ☐
University certificates and diplomas ☐ University 1st cycle (including classical courses) ☐
University 2e cycle Master ☐ University 3e cycle Doctorat ☐ I prefer not to answer ☐
7. Are you a permanent resident/citizen of Canada? Yes ☐ No ☐
8. What is your nationality?

SECTION 2: ETHNIC ENTREPRENEURSHIP

2.1. Experience in entrepreneurship and investment

1. In what field is your entrepreneurship /investment?
Real State ☐ Grocery store ☐ Restaurant ☐ Bakery and pastry ☐ Technical services ☐
Manufacturing ☐ Industrial ☐ Financial and administrative services ☐ Others ☐ specify
2. Have you ever had any knowledge and experience in this area (before starting the business)?
Yes ☐ No ☐
3. How many years do you have Canadian experience in this field?
Less than 1 year ☐ 1 to 5 years ☐ 6 to 10 years ☐ More than 10 years ☐
4. Have you experienced this type of entrepreneurship and business in your country?
Yes ☐ No ☐
5. Have you already decided to do entrepreneurship in this field in Quebec (before arriving)?
Yes ☐ No ☐
6. What was your main motivation for starting this type of business (entrepreneurship)?
Financial ☐ non-financial ☐, please specify:
7. What problems are you facing in your business?
Financial ☐ Compatibility with the environment ☐ language barriers ☐
Finding an appropriate job ☐ Others ☐ specify
If you chose the last option, please mention your motivation for doing entrepreneurship below.

2.2. ETHNIC ENTREPRENEURSHIP INVESTMENT SUCCESS

1. How long have you been working in this current area?
 Less than 3 years ☐ 3-5 years ☐ 6-10 years ☐ 11-20 years ☐ More than 20 years ☐
2. Is the start-up phase of your business over?
 Yes ☐ No ☐
3. Is your market position defined? (It means, do you have your own market share)?
 Yes ☐ No ☐
4. How much are you satisfied of your market share?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
5. How much trouble do you have in payments to personnel and business expenses?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
6. How do you rate the stability of your business?
 Very little ☐ little ☐ average ☐ Much ☐ Very much ☐
7. How satisfied are you with the number of new customers/ clients attracted?
 Very dissatisfied ☐ Somewhat dissatisfied ☐ Neither satisfied nor dissatisfied ☐
 Somewhat satisfied ☐ Very satisfied ☐
8. How dissatisfied are you with the number of the lost customers/ clients?
 Very dissatisfied ☐ Somewhat dissatisfied ☐ Neither satisfied nor dissatisfied ☐
 Somewhat satisfied ☐ Very satisfied ☐
9. How many personnel do you have in your business?
9. What is your ability to hire new personnel in the future?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
10. Average growth in your business inputs (materials) each quarter?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
11. Average growth in your sales/services each quarter?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
12. Average reduction in your business expenses?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
13. Average increase in quality of products /services?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
14. The average growth in your cash-flow?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
15. The average growth in your debts?
 Very little ☐ Below average ☐ average ☐ Above average ☐ Very much ☐
16. Average improvement in response to customer requests?

	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
17. How much your business strengthens the ethnic networks?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
18. How useful is your business for your ethnicity?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
19. To what extent have you used the opportunities not used by the native entrepreneurs?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
20. To what extent do you think your business Strengthens the ethnic economy?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
21. To what extent does your business make a difference in economy of the neighborhood you operate?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
22. To what extent have you adapted to the business environment?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
23. To what extent do you hope this entrepreneurship will lead you to your goals?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
24. How satisfied are you with the performance of your business?	Very little ☐	Below average ☐	average ☐	Above average ☐	Very much ☐
25. How far will you continue this activity under current conditions?	I will definitely continue with all my might ☐ I will continue for now ☐ I can stop ☐ I will definitely stop ☐ I haven't made a decision yet ☐				
26. How motivated are you to work harder and achieve more in your business?	Very little ☐	Below average ☐	Average ☐	Above average ☐	Very much ☐
27. To what extent will you withstand tough business conditions?	Very little ☐	Below average ☐	Average ☐	Above average ☐	Very much ☐
28. How satisfied are your customers/ clients with your business products/ services?	Very little ☐	Below average ☐	Average ☐	Above average ☐	Very much ☐
29. How has much your enterprise achieved its strategic objectives?	Very little ☐	Below average ☐	Average ☐	Above average ☐	Very much ☐
30. How personally satisfied are you with your entrepreneurial activities?	Very little ☐	Below average ☐	Average ☐	Above average ☐	Very much ☐

31. To what extent does your business maintain its sustainable performance over time?

Very little ☐ Below average ☐ Average ☐ Above average ☐ Very much ☐

32. How well are you integrated into the local entrepreneurial ecosystem?

Very little ☐ Below average ☐ Average ☐ Above average ☐ Very much ☐

33. To what extent does your success inspire other members of your ethnic group?

Very little ☐ Below average ☐ Average ☐ Above average ☐ Very much ☐

SECTION 3. BEHAVIORAL FINANCE

How does each of the following apply to your business and investing?

		Strongly agree	Agree	Somewhat agree	Disagree	Strongly disagree
1	My decisions are based on the pattern of my previous experiences and beliefs					
2	I use the rule of thumb in decisions-making					
3	I often make decisions based on the similarity of circumstances and events					
4	I have an unrealistic idea of my abilities					
5	I have authentic confidence in my prior knowledge and experience					
6	My predictions about the completion of activities are often true					
7	I consider personal preferences in market reality					
8	I can recall my past experiences in decision making					
9	My experiences are available in entrepreneurial decisions					
10	I usually rely on the first information obtained about a subject					
11	I interpret newer information from the anchor reference point					
12	Sometimes I use irrelevant information unconsciously					
13	I usually accept my mistakes in decisions					
14	I avoid regrets in entrepreneurship by taking logical steps					
15	I usually regret my decisions after making them					
16	I am reasonable about money and its value					
17	I influence my mind with advertising tricks					
18	I emphasize maintaining a behavior more than it should					
19	I usually choose risky behavior when faced with the possibility of loss					
20	For me, the pain of losing is heavier than enjoying of profit					
21	Usually, my behaviors are irrational due to extreme fear of the situation					
22	I am enough capable to exercise self-control in tempting situations					
23	I have a greater desire for planning and budgeting					
24	As an entrepreneur, I conflict with my desires and goals					
25	I trust price, volatility and interest rate curves in the market					
26	I am impressed by the prices available from the reference market					
27	I trust trading platforms that detail market transactions					
28	I usually affected by similar trends					
29	I usually analyze the market situation in my business decisions					
30	I focus on foresight and environmental analysis in my decisions					
31	I usually follow others in investment decisions					
32	I make decision independently based on my private information					
33	In my decisions, I usually influenced by the similar decisions of others					
34	I consider external judgments and evaluations					
35	I tend to make easy investment decisions					
36	I focus on the present in my investment decisions					
37	I use the opinions of others in my entrepreneurial decisions					
38	I easily accept the opinions of others in my entrepreneurial decisions					
39	I consider the wishes of others in my entrepreneurial decisions					
40	I am very precise in my entrepreneurial decisions					
41	I have a good ability to predict investment risks					
42	I act systematically in my investment decisions					
43	I make decisions to achieve my personal investment goals					

44	For me, first, it is important to have a profit in the investment					
45	I have no anxiety in investment decisions					
46	I like to take risks in investment decisions					
47	I am highly motivated to gain new experience and knowledge in investment					
48	I tend to self-assess my entrepreneurial decisions					

SECTION 4. PROJECT MANAGEMENT METHODOLOGY

How does each of the following apply to your business and investment?

		Very little	Below average	Average	Above average	Very much
1	In my business, I react quickly and flexibly to changes in the environment					
2	I have enough compatibility with the business environment					
3	I use a feedback system in my business					
4	In my business, I use incremental growth with short cycles					
5	By embracing change, I employ continuous learning and improvement					
6	I use application software in my business					
7	The value chain and waste reduction in my business is transparent					
8	There is an acceptable synergy in my business key projects					
9	There is participation in the strategic decisions of my business					
10	In my business, effective communication is used to solve problems					
11	In my business, corrective actions are used to manage risk in the portfolio					
12	In my business, budget and resource management is applied					
13	Operational parameters and controls are used in my business					
14	In my business there is good interaction with stakeholders					
15	I have a portfolio of projects and programs in my business					
16	I have system of selecting, prioritizing and controlling projects & programs					
17	I can bridge the gap between strategy and execution					
18	I can allocate and combine long-term assets					
19	I can create an investment portfolio that balances risk and reward					
20	In my business, I can balance business activities					
21	In my business, I know how to reduce taxes in the long run					

SECTION 5. BUSINESS ENVIRONNEMENT

How does each of the following apply to your business and investment?

		Very little	Below average	Average	Above average	Very much
1	I am aware of Canadian and Quebec business laws and regulations					
2	I know the process of getting loans					
3	I know the role of unions and government in supporting businesses					
4	The raw materials and parts needed by my business are available					
5	The quality of materials and parts required by my business are acceptable					
6	Standards of my business are available					
7	I can attract target customers					
8	I can keep existing customers					
9	My target market size is appropriate					
10	My business has a competitive advantage					
11	I have strong competitors in business					
12	In my business context there are online databases and digital resources					
13	I apply principles of management in my business					
14	Political stability of Canada affects the success of my business					
15	The internal and external trade policies impact my business					
16	The public policies, laws and regulations affect my business					
17	Canadian GDP, interest rate, inflation, etc. extremely influence my business					
18	Labor costs affect my business					
19	The disposable income of consumers/ clients has an impact on my business					
20	Global crises like Covid- 19 Pandemic affect my business					
21	The development of technology influences my business					
22	Big competitors like chain stores have an impact on my business					

23	The increase in the number of immigrants has an impact on my business					
24	Diversity of ethnicities has an impact on my business					
25	Environmental factors such as weather conditions affect my decisions					
26	The seasons influence my business decisions					
27	The length of day and night affects my business decisions					
28	Body biorhythms influence my business decisions					
29	Environmental sustainability influences my business strategies					
30	I adapt my operations to meet environmental standards					

SECTION 6. FINANCIAL LITERACY

How does each of the following apply to your business and investment?

		Very little	Below average	Average	Above average	Very much
1	I understand basic financial concepts such as interest rates and returns					
2	I can interpret balance sheets and financial statements					
3	I know how to assess investment risk and reward					
4	I manage finances using systematic and professional methods					
5	I regularly seek expert advice for major financial decisions					
6	I use accounting or financial management software to track performance					
7	I actively seek new investment opportunities					
8	I can identify profitable ventures before others					
9	I stay informed about funding and business support programs					

SECTION 7. MORE COMMENTS

Thank you very much for your collaboration.