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Financial Literacy and Consumer Well-Being: Examining the Role of Gender Role Ideology

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FINANCIAL LITERACY AND CONSUMER WELL-BEING:

EXAMINING THE ROLE OF GENDER

ROLE IDEOLOGY

A Dissertation

by

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ABSTRACT

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Financial literacy, or the ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions, has been linked to beneficial financial behaviors that support financial well-being. Despite these benefits, consumers tend to underperform in financial literacy tests with women generally faring worse than men. This dissertation draws from gender roles literature and Expectancy-Value Theory to examine how, why, and when traditional attitudes regarding societal gender roles (i.e., gender role ideology) hinder women's financial literacy and willingness to acquire financial knowledge. Moreover, it examines how financial literacy and willingness to acquire financial knowledge influence expectations of future financial security. I conduct two studies among adult women in the U.S. Study 1 consists of an online survey administered to 154 participants and employs covariance-based structural equation modelling to analyze the data. Results show that traditional gender role ideology is negatively related to financial literacy. This relationship is stronger among women who are more likely to identify with typically masculine psychological traits, such as being assertive or possessing leadership abilities. Additionally, willingness to acquire knowledge is positively related to expectations of future financial security. Study 2 consists of a between-subjects scenario-based experiment that primes traditional and egalitarian gender role ideology to further understand its influence on willingness to acquire financial knowledge, financial literacy, subjective value attached to financial matters, and financial self-efficacy. The scenarios were randomly shown to 137 participants. I use analyses of variance and independent sample t-tests to examine the mean differences between conditions. Results reveal that participants in the traditional condition report higher financial self-efficacy compared to participants in the egalitarian condition. This dissertation contributes to theory and consumer research in the financial literacy gender gap stream by identifying traditional gender role ideology as an antecedent to women's low financial literacy scores, and masculine gender identity as a boundary condition for this relationship. Additionally, it contributes to practice by providing public and private actors with psychographic segmentation characteristics relevant for targeting efforts. Stakeholders interested in increasing financial literacy may need to narrow on consumer clusters that hold traditional gender role attitudes.

DEDICATION

To my family.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Consumer researchers and marketing scholars have recently begun to study financial well-being. Research in this area (see Brüggen et al. 2017; Mende and Van Doorn 2015; Netemeyer et al. 2018) argues that financial well-being is an essential contributor to overall well-being. Moreover, financial literacy has been identified as an important skill linked to higher wealth accumulation later in life as well as decreased levels of debt (Lusardi and Mitchell 2011). Despite its importance, research shows that consumers tend to underperform in financial literacy tests with women generally performing worse compared to men (Bucher-Koenen et al. 2017). Previous research has examined potential causes for this knowledge gap such as household specialization, financial socialization, and gender stereotypes in the financial domain (Danes and Haberman 2007; Fonseca et al. 2012; Hung, Yoong, and Brown 2012). Yet, more insight is needed to understand through which mechanisms, and under which conditions such factors operate to influence the relationship with women's financial literacy and willingness to acquire financial knowledge. This research aims to examine socio-cultural factors that might prevent women from developing financial literacy and dampen their willingness to acquire financial knowledge, to identify through which mechanisms and under which boundary conditions they operate, and to examine how perceived financial well-being is influenced. This chapter will introduce the study by first discussing the research background, followed by the research problem, the research aims, objectives, and questions, the relevance of the study, its limitations, and a brief overview of the structure of the rest of the dissertation.

As issues like growing credit card debt and student loans as well as decreasing savings rates and retirement accounts become more prevalent, the ability to understand basic financial concepts such as inflation and interest rates gain more importance for consumers to make informed financial decisions that can enhance their financial well-being in the long-term. Past research has shown that consumers with high levels of financial literacy (i.e., consumers' "ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions" [Lusardi and Mitchell 2014, p. 6]) are more likely to plan for retirement, have less debt, and report more wealth accumulation later in life (Lusardi and Mitchell 2007a, 2007b, 2008, 2011). Moreover, financial illiteracy can affect consumers' money management on a day-to-day basis and ultimately their long-term financial goals (Braunstein and Welch 2002). Indeed, Lusardi, Mitchell, and Curto (2010) argue that, at the societal level, higher levels of financial literacy are integral for overall economic welfare.

Despite the important role that financial literacy plays in increasing consumers' ability to make optimal long-term financial decisions, a growing body of research shows that, in general, consumers tend to underperform in financial literacy tests (e.g., Lusardi and Mitchell 2011; Lusardi, Mitchell, and Curto 2010; Lusardi and Tufano 2009). Further, financial literacy deficiencies have been shown to be more severe among women than men (e.g., Bucher-Koenen et al. 2017; Chen and Volpe 2002; Cupák et al. 2018; Fonseca et al. 2012; Lusardi and Mitchell 2008). Hung, Yoong, and Brown (2012) argue that such gender differences in financial literacy place women in a particularly disadvantaged financial position because lower levels of financial literacy can potentially decrease women's economic participation. Not only does this knowledge gap has the potential to deteriorate women's present financial situation, but it can also affect the transmission of financial knowledge for future generations (Hung, Yoong, and Brown 2012). Moreover, Lusardi and Mitchell (2008) find that, compared to men, women are significantly less likely to plan for retirement. This lack of planning coupled with women's higher life expectancies as well as their likelihood of accumulating less wealth over time compared to men, and shorter careers in the workplace (see Alcon 1999; Anthes and Most 2000; Timmermann 2000) may particularly leave women in a vulnerable financial situation during retirement.

Extant research has explored potential causes for gender differences in financial literacy and has called attention to understanding the influence of variables such as personality traits, numeracy skills, learning opportunities presented, and financial literacy tests' formatting among others (see Hung, Yoong, and Brown 2012 for a review). Other research has focused on household specialization and division of labor between men and women (e.g., Fonseca et al. 2012; Hsu 2016; Ward and Lynch 2018). Still others have centered on gender stereotypes and financial socialization (e.g., Danes and Haberman 2007; Driva, Lührmann, and Winter 2016; Pahlevan Sharif, Ahadzadeh, and Turner 2020). For example, Driva, Lührmann, and Winter (2016) find that, when comparing financial literacy scores between men and women, the gender gap was larger when women tended to agree that men were more interested in or had more abilities to handle finances than women. Despite the knowledge generated by extant research, more insight is needed to understand why these stereotypical gender factors are at play as well as through which mechanisms and under which conditions they operate to impact women's financial literacy.

Given this research gap and grounded in gender role literature and expectancy value theory (Eccles 1983), this dissertation aims to examine traditional gender role ideology (i.e., traditional attitudes towards societal roles based on gender) as a socio-cultural variable that might prevent adult women in the U.S. from developing financial literacy and dampen their willingness to acquire financial knowledge, as well as to identify how and when these relationships hold, and to examine how perceived financial well-being is influenced. With this aim in mind, the objectives of this dissertation are to examine the relationship between gender role ideology and willingness to acquire financial knowledge, and between gender role ideology and willingness to acquire financial knowledge, and between gender role ideology and financial literacy among adult women in the U.S., to examine mediating variables that might explain these relationships, to examine moderators for these relationships, and to examine how willingness to acquire financial knowledge and financial literacy are related to perceived financial well-being.

To meet these objectives, this research is guided by the following research questions:

RQ #1: What is the relationship between gender role ideology and 1) willingness to acquire financial knowledge and 2) financial literacy among adult women in the U.S?

RQ #2: What is the relationship between perceived financial well-being 1) willingness to acquire financial knowledge and 2) financial literacy among adult women in the U.S?

RQ #3: What are the mechanisms underlying the relationships between gender role ideology and 1) willingness to acquire financial knowledge and 2) financial literacy among adult women in the U.S?

RQ #4: What are the boundary conditions influencing the relationships between gender role ideology and 1) willingness to acquire financial knowledge and 2) financial literacy among adult women in the U.S?

To answer these research questions, this dissertation takes on a quantitative approach using a survey-based study to test the theoretical framework, followed by an experiment to further assess the relationships between gender role ideology and willingness to acquire financial knowledge, financial literacy, financial self-efficacy, and attainment value attached to financial matters. Both studies employed a sample of adult women living in the U.S.

Expected contributions from this dissertation are threefold. First, this work aims to contribute to the literature stream dedicated to understanding factors contributing to the previously documented gender gap in financial literacy by examining gender role ideology as a socio-cultural deterrent for women's acquisition of financial literacy. Furthermore, this research seeks to answer not only "what" factors contribute to such gender differences, but also "how" and "when", thus broadening the scope of the extant research in this area. Second, expectancy-value theory (EVT) has been widely used in the psychology field to explain gender differences in academic choices and subject performance. This study extends EVT to a different context in which gender differences are explained. Moreover, it seeks to identify boundary conditions not previously specified in the literature which may influence consumers' choices regarding financial literacy acquisition despite the subjective value and expectancy beliefs they may hold. Third, my work attempts to inform public and private actors interested in increasing consumers' financial literacy levels by providing insights to a specific financially vulnerable segment that may assist them in developing more effective targeting techniques. Finally, I hope that insights uncovered in this work will facilitate the pursuit of future research guided by similar questions from marketing scholars in this topic.

The contributions of this study should be viewed considering its methodological and conceptual limitations. Conceptually, this work aims to provide a deeper understanding of women's low financial literacy levels compared to men but does not offer empirically tested solutions or interventions although its findings could help in their conceptualization. Moreover, this work only examines individual factors (e.g., attitudes or traits) and does not account for structural factors (e.g., access to financial products and services or financial education received in high school). While the examination of individual factors offer important insights, it is equally important to consider the social systems in which people operate to provide a contextual understanding. Methodologically, this work employs a quantitative approach, while this approach allows us to statistically examine the relationships among several variables at once, it is also limited by the definitions, measurement items, and analytical tools I have deemed most appropriate to employ. Other research approaches, such as a qualitative approach, could provide a deeper and more contemporary understanding of financial literacy or gender role beliefs, for example, among the population. Furthermore, the generalizability of these findings is limited to a sample of adult women in the U.S. While insightful to understand financial literacy acquisition in the U.S., these findings do not translate to other countries or cultures.

I now turn to the structure of this dissertation. In Chapter I: Introduction, I introduce the research problem, research aims, objectives, and research questions, the relevance of the research, briefly discuss the main limitations, and provide an outline of the document structure that expands on the purpose of each of its sections. In Chapter II: Literature Review and Theoretical Framework, I review the relevant literature, present my theoretical framework, and formulate my hypotheses. Specifically, Chapter two acknowledges and briefly discusses the constructs of sex and gender and their utilization in consumer research. It also provides a brief overview of literature streams dedicated to the study of gender differences to justify a socio-cultural approach. Further, it discusses previous research findings regarding gender gap in financial literacy, relevant literature from gender roles research, an overview of expectancy value theory, as well as definitions and relevant literature for each of the proposed variables. In Chapter III: Methodology and Results, I discuss my methodology, procedure, sample characteristics, measure validity and reliability, analyses, and results. Finally, in Chapter IV: Discussion and Conclusion, I discuss my findings in relation to extant literature. I also outline my theoretical contributions and practical implications. Moreover, I discuss more in-depth the limitations of the study and offer avenues for future research. I conclude by summarizing my research aims and objectives, how and whether they were addressed, and what were the main take-aways given the previously discussed limitations. Having concluded Chapter I: Introduction by presenting the structural outline of the dissertation, I now turn to Chapter II: Literature Review and Theoretical Framework.

CHAPTER II

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This chapter discusses the relevant literature pertaining this study. It also presents the theoretical framework and formulates hypotheses. I begin by briefly discussing the constructs of sex and gender and their utilization in consumer research followed a brief overview of literature streams dedicated to the study of gender differences to justify a socio-cultural approach. I then turn to discuss previous research findings regarding the gender gap in financial literacy, relevant literature from gender roles research, expectancy value theory, and present definitions and relevant literature for each of the substantive variables.

Gender and Consumer Research

Given the gendered nature of the problematics addressed in this research, a distinction between the terms *sex* and *gender* – as well as their use in consumer research – should be made before discussing the relevant literature. Sex refers to biological categories (i.e., male/man, female/woman, and intersex) that are derived purely from an organism's physiological characteristics. While there is debate on whether biological sex is a determinant of gendered behavior (e.g., aggression in males and nurturance in females), consumer research acknowledges that it markedly determines an individual's socialization experiences (Fisher and Arnold 1990). Gender, on the other hand, refers to social categories (i.e., masculine, feminine, androgynous, etc.) that are culturally rooted, and are descriptors of a person's psychology, traits, and behavioral tendencies. Despite the tendency to use sex and gender interchangeably, sex does not always predetermine gender. In her seminal work on the understanding of gender, Sandra Bem (1974) notes that there is considerable gender variation between and among the sexes, hence, not all women are feminine nor are all men masculine. Indeed, feminist thinkers have posited that existing as a sexed individual (e.g., male, female etc.) is not enough to be recognized as a gendered individual (e.g., masculine, feminine, etc.), but that to be recognized as such one must "perform" roles and behaviors that are consistent with normative gendered beliefs (Butler 1990).

Consumer researchers have noted the importance of the study of gender and claim that "because gender is a pervasive filter through which individuals experience their social world, consumption activities are fundamentally gendered" (Bristor and Fischer 1993 p. 519). Such distinction makes understanding gender differences pivotal to marketing and consumer researchers (Meyers-Levy and Loken 2015). Beyond gender differences, scholars have also advocated for the relevance of examining phenomena concerning a single gender. Bristor and Fischer (1993), for instance, call for research that examine problematics reflecting concerns relevant to women consumers to heighten our discipline's sensitivity to gender issues from a feminist standpoint. Having discussed concepts of sex and gender as well as their relevance to consumer research, I now review the different approaches that have been taken to understand and explain observed differences between men and women.

Theories of Gender Differences

Consumer researchers and marketers have previously examined behavioral and psychological differences between the genders through various lenses. In their review of this literature stream, Meyers-Levy and Loken (2015) describe four major theories that have been used to understand and explain gender differences: evolutionary theories, hormonal exposure and brain differences, information processing strategies, and socio-cultural theories. The authors argue that these theories should be viewed as complementary and interrelated rather than competing explanations for observed gender differences. This section outlines a brief discussion of each of these four theories and explains why the socio-cultural theory is chosen as a lens to understand women's lower financial literacy levels relative to men.

The first theory is grounded on evolutionary psychology. Previous work in consumer research has utilized this lens to partially explain human behavioral phenomena in various areas such as risk-taking, competition, luxury consumption, self-control, as well as consumer behavior observed in women and families (Durante and Griskevicious 2018). The evolutionary approach posits that gender differences emerged due to adaptations to environmental challenges faced by hunter-gatherer ancestors (Tooby and Cosmides 2005). This approach suggests that contemporary gender differences, such as differences in risk-taking and aggression, could be the result of hunter-gatherer ancestors' attempts to solve mating-related problems. For example, males' need to compete for a mating partner may have led to develop relatively more aggressive, risk-taking, and resource-enhancing tendencies. On the other hand, females' inherent risk of a possible pregnancy while mating led them to develop relatively more risk-averse, resource-conservation tendencies (Ellis et al. 2012). The evolutionary tendency of females to "forage" for unfamiliar resources has also been found to explain gender differences in responses to unfamiliar brands, where women have been found to place more trust in unknown brands compared to men (Krapinska-Krakowiak 2021). This approach has also informed work on gender differences in financial behaviors. Griskevicious et al. (2012) examine consumers' desire to save and propensity to incur debt in a mate attraction context and find that in a high-competition environment for heterosexual men (where there is a higher number of men relative to women),

men are less willing to save and more likely to borrow for immediate rewards during courtship. Beyond the mating context, evolutionary researchers suggest that gender differences in identifying emotions from facial express and delaying gratification might stem from abilities developed for child-rearing in women (Hampson, van Anders, and Mullin 2006; Silverman 2003). Thus, evolutionary theories posit that observed gender differences can be explained (at least in part) by considering adaptations in human biology due to environmental changes experienced by our ancestors.

Although the evolutionary approach has failed to explain certain behavioral differences, scholars view it as a complementary approach that provides an underlying logic for researchers to view human behavior with the big picture in mind (Durante and Griskevicius (2018). A recent example of scholarship in marketing that has used an evolutionary approach as complementary to the sociocultural approach to understand gendered consumer behavior is Dennis et al. (2018). Dennis et al. (2018) examine gendered shopping styles across 11 countries to determine whether these differences are a matter of "nature" (i.e., evolutionary approach) or of "nurture" (i.e., sociocultural approach). These authors argue that if differences in shopping styles between the genders are determined by sociocultural influences, then they should be only minimally observed in countries with a high degree of gender equality. Their findings show, however, that gender differences in shopping styles were more prominent in high gender-equality countries (vs. low gender-equality countries) where women tended to show more empathizing shopping styles (traits consistent with the "gatherer" role) and men tended to show more systemizing shopping styles (traits consistent with the "hunter" role). Dennis et al. (2018) conclude that although shopping behavior is largely a cultural phenomenon, it can benefit from taking an evolutionary lens.

Hormone exposure and brain connectivity have also been studied as biological factors that explain cognitive and behavioral gender differences. Research suggests that testosterone exposure during critical stages of development (e.g., pre-natal stage) influences sexual orientation, core gender identity, and children's sex-typed play (e.g., preference for toy cars instead of dolls in 3- to 10-year-old girls with elevated androgen levels [Pasterski et al. 2005]) among other gender-related behaviors (Hines 2006), while different brain connectivity patterns have been observed in men and women in different cognitive tasks such as decoding faces (Bourne 2005). Over-production of androgens in women has also been linked to benefits in spatial cognition and visualization (a cognitive ability where men tend to have an advantage compared to women [Syzmanowicz and Furnham 2011]) (Mueller et al. 2008).

Information processing differences between the genders have led consumer researchers to develop the selectivity hypothesis. This theory does not attempt to explain the causes of cognitive and behavioral gender differences, rather it proposes that men and women employ different strategies and threshold for information processing which allows for gender-specific cognitive advantages (Meyers-Levy 1989; Meyers-Levy and Maheswaran 1991; Meyers-Levy and Sternthal 1991). The selectivity hypothesis posits that males tend to process information more abstractly and rely on effortless heuristic cues more often, while females tend to process information more comprehensively and elaborate on it more often. Thus, compared to females, males tend to be more selective with presented information which allows them to process it quicker. In line with this theory, Medina-Molina, Rey-Moreno, and Periáñez-Cristóbal (2021) have found that using front-of-package labels displaying nutritional information on food products has a positive effect on brand attitudes and purchase intention for men only, this finding is attributed to the selectivity hypotheses and men's tendency to rely on heuristics to process information. Similarly, when examining gender differences in evaluations of pricing strategies, research finds that including an external price reference in an ad (e.g., "Was $84.99, Now $64.99") increases price recall, perceived savings, and willingness to buy for women only due to women's tendency to expend more effort when processing information (Vaidyanathan and Aggarwal 2020). This approach has also been used in consumer behavior research along with the evolutionary theory to explain how men and women process information and how this affects their shopping style, where men are hypothesized to process information in a more goal-oriented way that leads them to take shopping decisions quickly and women are hypothesized to process information in a more communal way which allows leads them to browse more before making shopping decisions (Dennis et al. 2018).

Finally, the socio-cultural theories propose that differences between the genders emerge from a combination of social, cultural, and environmental factors, as the biosocial constructionist model suggests (see Wood and Eagly 2012). These theories do not negate the biological differences present between the genders, rather they posit that these differences led to historical differences in division of labor (e.g., men's greater strength and speed were skills better suited for hunting, while women's ability to bear children was better suited to nurture). Wood and Eagly (2012) argue that as societies became more complex, power relations between men and women emerged as new economic productive roles were created. While men's physical advantage over women in terms of strength and speed positioned them in the role of family provider, women's childbearing capabilities positioned them in the role of caregiver. These roles later became reinforced in cultural beliefs and led to societal expectations of appropriate behavior for both males and females. As we develop into adulthood and socialized into our cultural milieu, such gender roles become internalized and that pressure to conform to these roles leads us to behave consistently with gender-appropriate standards (Witt and Wood 2010). As Meyers-Levy and Loken (2015) note in their work

> "…if women are observed to care for children, then women are believed correspondingly to be nurturing, kind, and possess other communal traits like emotional intelligence. If men are observed in strength-intensive tasks, they are believed to be assertive and dominant and have skills in leadership, math, and mechanics" (p. 131).

These corresponding skills and traits are not just associated with a specific sex, but with time they also become expectations that guide gendered behavior. People are socialized through social rewards and punishments during childhood (e.g., discouraging young boys of crying and young girls of being assertive) to conform to gender roles, influencing individual choices, goal setting, and self-image, leading to gender differences (Meyers-Levy and Loken 2015).

A socio-cultural perspective with specific focus on gender roles is taken to guide this research as financial knowledge and can be viewed as a specialized expertise attained through, and relevant for, economic labor (historically a masculine-typical role). Aside from providing a background through which women's lower financial literacy levels could be explained, this theoretical perspective also calls for societal changes in expectations for men and women across time to reduce gender inequities (Wood and Eagly 2012), thus also guiding potential solutions. I now turn to review the literature documenting the gender gap in financial literacy.

Financial Literacy and Gender Role Ideology

Gender Gap in Financial Literacy

Research on financial literacy consistently reports lower financial literacy scores for women than for men (Chen and Volpe 2002; Lusardi and Mitchell 2008; Zissimopoulous, Karney, and Rauer 2008). Women's low financial literacy scores compared to men have been observed even when the level of education is consistent across genders. For example, Zissimopoulous, Karney, and Rauer (2008) find that less than 20% of middle-aged college-educated women successfully answered a basic compound interest question compared to 35% of middle-aged college educated men. Chen and Volpe (2002) find similar results in their study of gender differences in financial literacy among college students. Their findings suggest that women were significantly less financially knowledgeable than men when controlling for major, work experience, and age. Although their study does find education and work experience significantly increase financial literacy, women still tend to underperform compared to men. This study also finds that women tend to report lower levels of enthusiasm and confidence regarding personal finance topics, as well as a lower willingness to learn than men.

Extant literature has identified several possible explanations for this gender effect (see Hung, Yoong, and Brown 2012 for a review), including differences in numeracy skills (Niederle and Vesterlund 2010), self-confidence (Al-Bahrani, Buser, and Patel 2020; Bucher-Koenen et al. 2017), and learning opportunities about financial products and financial decision-making between men and women (Agnew and Cameron-Agnew 2015; Agnew, Maras, and Moon 2018), task specialization resulting from marital division of labor within a household (Hsu 2016; Ward and Lynch 2019), and responses to different test format (e.g., multiple-choice vs. essay-type tests). For example, gender differences in numeracy and mathematical skills where women tend to underperform have been identified as potential variables affecting the acquisition of financial literacy (Lusardi 2012). Research finds that, on average, women tend to report feeling less confident on their mathematical skills compared to men (Syzmanowicz and Furnham 2011). This may lead women to feel less confident in their ability to acquire and process financial information. Indeed, research suggests that women tend to report lower levels of confidence when being asked to assess their own levels of financial literacy and financial decision-making (e.g., Danes and Haberman 2007). Women also tend to be more risk averse when investing (Eckel and Grossman, 2008; Jianakoplos and Bernasek 1998). Furthermore, such differences in math/verbal skills may affect the way women perform in financial literacy tests depending on whether the test is presented in a multiple-choice format versus an essay-format, where applying an essay-format is shown to mitigate gender differences (see Hirschfeld, Moore, and Brown 1995).

Another hypothesized detrimental factor influencing women's financial knowledge acquisition is lack of exposure compared to men. Consumers may acquire financial literacy by being exposed to financial products and by having the opportunity to carry out financial decisions, that is, learning by doing. Along this line of thought, researchers have studied financial decision-making within married couples, the rationale being that marital division of labor results in task specialization, thus granting one person in the couple the opportunity of learning by doing (e.g., Hsu 2016). For example, if one partner is responsible for household maintenance related tasks whereas the other is responsible for household long-term financial planning, each will acquire the sets of skills and knowledge relevant to their responsibilities. Thus, over time, one partner will become more proficient in household maintenance than the other, and vice versa. Ward and Lynch (2019) examine the distribution of financial responsibilities in long-term dyadic relationships and its consequences on individual financial literacy. The authors report that consumers who find themselves in long-term relationships will often designate one partner as the Chief Financial Officer (CFO) of the household, which may be efficient and desirable if the partnership stands. If the partnership is dissolved, however, this may leave the non-CFO vulnerable as they will more than likely not have developed the financial expertise that their CFO counterpart has accumulated through their years as partners simply because they did not need to. Similarly, Fonseca et al. (2012) examine household specialization as a potential explanation for the gender gap in financial literacy. The authors' initial premise is that males acquire financial knowledge by specializing in household financial decision-making, while females specialize in other household tasks. Their study, however, finds little support for household financial decision-making specialization by gender within couples. Interestingly, the authors find a significant positive correlation between financial decision-making and financial literacy for men only. Thus, whereas decision-making increases financial knowledge for men, women who are tasked with household financial decision-making do not seem to report higher financial knowledge. In other words, involvement in financial decision-making does seem to increase financial knowledge for men but not for women.

Studies have also shown that institutional, social, and cultural barriers may exist that hinder access to financial knowledge for women and thus affect their acquisition of financial literacy (Bellucci, Borisov, and Zazzaro 2010; Hung, Yoong, and Brown 2012). In this vein, researchers have examined the role of financial socialization and gender stereotypes in influencing financial literacy levels between men and women (Danes and Haberman 2007; Driva, Lührmann, and Winter 2016; Pahlevan Sharif, Ahadzadeh, and Turner 2020). For example, Pahlevan Sharif, Ahadzadeh, and Turner (2020) investigate how financial socialization in the form of parents' financial teachings and financial behaviors influences young adults' financial information seeking behavior and how this affects financial literacy. Their work suggests that parental financial teachings impact women's financial information seeking behavior which in turn increases their financial literacy. Interestingly however, this is not the case for males where no information seeking behavior is reported. In fact, evidence suggests that in the case of males, parental financial teachings were negatively correlated to financial literacy. The authors argue that this negative association could perhaps be due to males' tendency of being defensive and exhibiting risk-taking behavior (e.g., Lemaster and Strough 2014; Reniers et al. 2016; Walczak and Pienkowska-Kamieniecka 2018), while females seem to be more receptive to financial teachings. It is thus speculated that males gain financial literacy through more varied channels than females do. Moreover, although parental financial teachings increased financial literacy among females, it did not result in positive financial behaviors. Only when parents also embraced positive financial behaviors did their children report positive financial behaviors. Similarly, Danes and Haberman (2007) found that after taking a financial planning course, women reported having learned more than men, but they still received lower scores of financial knowledge at the end of the course. The authors argued that gender discrepancies in students' financial literacy scores could be attributed to socially constructed gender expectations from socializing agents such as family and school. Along this line, Driva, Lührmann, and Winter (2016) showed that teenage women's financial literacy scores deteriorated for those who held stronger gender-stereotypical beliefs about knowledge acquisition and task performance in the financial domain such as the belief that men are usually more interested in finances than women and that men are more likely to be concerned with family finances than women. These findings motivate us to examine whether attitude toward appropriate societal roles based on gender influences women's financial literacy scores. To do so, I draw on gender role ideology literature to ground my research hypotheses.

Gender Role Ideology

Initially referred to as "sex role ideology" by Kalin and Tilby (1978), gender-role ideology (also referred to as gender-role orientation, or gender-role beliefs) is conceptualized as a continuum with traditionalism on one end and feminism (or egalitarianism) on the other. Gender roles are culturally derived behaviors associated with masculinity and femininity, and they are tied to gender-role attitudes about the roles and responsibilities of men and women in society (Prince et al. 2020). Whereas a traditional ideology of societal gender roles espouses the belief that differences exist between the genders that delineate appropriate and inappropriate roles for men (e.g., provider and final authority in the home) and women (e.g., housewife and mother), an egalitarian ideology holds that such differences are socially constructed, and thus societal roles should not be determined based on gender (Kalin and Tilby 1978). Early research in gender roles discourse posits that, historically, western societal gender norms and stereotypes have served the traditional ideology that designates women to submissive roles thus, making it systematically difficult for them to perform traditionally masculine roles (Fırat 1997; Larsen and Long 1988).

It is important to distinguish between gender-role ideology and gender stereotypes where the latter are "descriptive beliefs about gender characteristics and differences" (Kalin and Tilby 1978, p. 731). This conceptual distinction is meaningful because while it is possible to acknowledge the fact that gender differences exist (i.e., descriptive beliefs), one can reject the idea that such differences should exist (i.e., prescriptive beliefs) (Ritter 2004). Extant literature has examined some aspects of traditional versus egalitarian gender-role ideologies (Fischer and

Arnold 1990, 1994; McCabe, Ingram and Dato-On 2006; Ulrich 2013). Specifically, there appears to be a correlation between gender-role ideology and goal setting among children (Zuckerman 1981). Early research finds that evidence of such ideology develops in children as early as three years of age and cements thereafter (Reis and Wright 1982), thus suggesting the importance of socialization and parent modelling in early goal setting.

Drawing on gender role ideology and applying it to the research context of this dissertation, I hypothesize that holding a traditional ideology (vs. an egalitarian one) of gender appropriate roles and behaviors may result in the pursuit of roles and behaviors consistent with idealized images of appropriate gender roles, while avoiding behaviors that may be inconsistent with them (e.g., Dicke, Safavian, and Eccles 2019). Such ideology coupled with the belief that a specific knowledge domain may be masculine or feminine (e.g., engineering is a masculine domain vs. nursing is a feminine domain), may discourage individuals to acquire knowledge or skillsets they deem to be incongruent with their expected gender-roles (e.g., math is more masculine and reading and writing are more feminine). Indeed, recent research examining gender performance differences in top business schools finds that women's grades in quantitative courses (e.g., finance) are 11% of a standard deviation lower than men's, while men's grades in non-quantitative courses (e.g., management) are 23% of a standard deviation lower than women's (Krishna and Orhun 2022). Krishna and Orhun (2022) also find that although the business schools that they examined were relatively gender balanced (i.e., 41% of students were female), gender differences were seen in post-graduation job placements with only 20% of women taking jobs in investment banking and only 10% of men taking jobs in human resources. Moreover, general negative stereotypical beliefs about women's quantitative skills might deter women from working or learning about quantitative domains (von Hippel, Sekaquaptewa and

McFarlane 2015; Driva, Lührmann, and Winter 2016). Given that finances have typically been perceived as a masculine domain because it is a male-dominated and quantitative field (von Hippel, Sekaquaptewa and McFarlane 2015), I expect that consumers who endorse a traditional gender-role ideology will perceive acquiring financial knowledge to be inconsistent with their expected societal roles and therefore be discouraged from learning about finances, which will in turn lead to a lower level of financial literacy. Formally, I propose that:

H1: Gender-role ideology is negatively related to willingness to acquire financial knowledge such that the more traditional a consumer's gender-role ideology is, the less willing the consumer will be to acquire financial knowledge.

H2: Gender-role ideology is negatively related to financial literacy such that the more traditional a consumer's gender-role ideology is, the less financial literate the consumer will be.

Perceived Financial Well-Being

The social sciences have had a long interest in individual perceptions and self-assessments of well-being in general (Diener 1984; Su, Tay, and Diener 2014; Wilson 1967). Research shows that subjective well-being results in positive outcomes in various domains. For example, subjective well-being predicts physical health outcomes such as prevention of heart disease (Rozanski and Kubzansky 2005) and longevity (Diener and Chan 2011). Subjective well-being also relates to higher levels of job satisfaction and performance (Judge, Ilies and Dimotakis 2010), and optimal consumer decision-making (Gilovich, Kumar, and Jampol 2015). Considering the positive outcomes associated with subjective well-being, scholars recognize the importance of also examining its predictors (Friedman and Kern 2014).

Diener (1984) states that subjective well-being "is concerned with how and why people experience their lives in positive ways, including both cognitive judgments and affective reactions" (p. 542). Moreover, subjective well-being is conceptualized to be an overall assessment of the states of various life domains (such as career, health, and family) weighted by the importance that consumers attach to each of them (van Praag, Frijters and Ferrer-i-Carbonell 2003). In this vein, the financial domain has been reported to be a relevant aspect to consumers' assessments of subjective well-being (Dolan, Peasgood, and White 2008). Dolan, Peasgood, and White (2008) find that objective measures of financial well-being (e.g., accumulated wealth, incurred debt, income) influence perceptions of well-being. However, given that subjective well-being reflects individual cognitive judgements and affective responses of life experiences (Diener 1984), subjective measures of financial well-being should also be examined. Indeed, Netemeyer et al. (2018) find that consumers' perceptions of their financial well-being significantly predicted their overall assessment of subjective well-being. Moreover, financial well-being has also been associated with academic success, physiological and psychological health, and life satisfaction among college students (Xiao, Tang, and Shim 2008).

In their conceptualization of perceived financial well-being, Netemeyer et al. (2018) theorize, and find support for, two separate temporal dimensions of the construct. The first dimension, referred to as current money management stress, focuses on affective evaluations of one's present financial situation (e.g., perceptions of ability to meet immediate financial obligations). The second, referred to as expected future financial security, focuses on affective evaluations of one's financial prospects in the future (e.g., perceptions of ability to meet future financial obligations and long-term goals). The first dimension reflects assessments about the current state of one's finances, while the second dimension reflects assessments about the expected future of this individual's finances.

Academic understanding of perceived financial well-being seems to support Netemeyer et al.'s (2018) two-dimensional notion of the construct. For example, past research has conceptualized perceived financial well-being as perceptions of "one's financial situation, including . . . perceived financial strain, perceived manageability of finances, and perceived financial prospects" (Zyphur et al. 2015 p. 1), and of one's ability to "sustain current and anticipated desired living standards and financial freedom" (Brüggen et al. 2017 p. 229). Research also suggests that economic insecurity could be derived from perceptions of both current and expected financial situations (Chou, Parmer, and Galinsky 2016). Moreover, research notes that wealth accumulation for retirement may improve consumers' perceptions of their financial situation in the future, but this may not necessarily translate into their present perceived ability to manage finances on a day-to-day basis (Ruberton, Gladstone, and Lyubomirsky 2016). Thus, this research adopts the definition posited by Netemeyer et al. (2018) and defines perceived financial well-being as perceptions of one's current (i.e., current money management stress) and expected financial situation (i.e., expected future financial security).

These two dimensions of perceived financial well-being have been shown to have different influences on subjective well-being. While current money management stress is shown to be negatively related with subjective well-being, evidence suggests that expected future financial security has a positive relationship to subjective well-being (Netemeyer et al. 2018). Expected future financial security's positive influence on subjective well-being is supported by extant literature that posits that positive expectations of future financial prospects have a stronger effect on life satisfaction compared to present levels of income (Johnson and Krueger 2006). In line with this argument, Lusardi and Mitchell (2011) find that retirees' subjective well-being is related to future financial security as they tend to feel optimistic regarding their ability to financially manage health-related events. Similarly, life satisfaction levels tend to be higher for consumers who diligently save for the future compared to those who save relatively less but belong to the same income bracket (Chancellor and Lyubomirsky 2011).

Research finds that expected future financial security is predicted by future-oriented financial traits. For example, Netemeyer et al. (2018) find that willingness to take prudent investment risks, planning for money long-term, and perceived financial self-efficacy, among other variables, were positively related to expected future financial security. Given that willingness to take prudent investment risks and planning for money-long term are both linked to long-term wealth accumulation and financial security (Ameriks, Caplan, and Leahy 2003; Tam and Dholakia 2014; Weber, Blais, and Betz 2002), I predict a similar relationship between willingness to acquire financial knowledge and expected future financial security, and financial literacy and expected future financial security. I hypothesize that consumers with higher willingness to acquire financial knowledge will result in higher levels of expected future financial security given that willingness to learn demonstrates a long-term orientation towards one's financial situation. Moreover, I hypothesize that higher levels of financial literacy will be positively related to expected future financial security given that objective knowledge might provide consumers with the necessary domain-specific knowledge to plan their financial future. Formally, I propose the following direct relationships:

H3: Willingness to acquire financial knowledge is positively related to expected future financial security.

H4: Financial literacy is positively related to expected future financial security.

Expectancy-Value Theory and the Mediating Role of Financial Self-Efficacy and Subjective Value

Developed in the field of psychology, EVT was extended by Eccles and colleagues to examine gender differences in achievement related patterns such as educational and occupational choices. Eccles and colleagues have been particularly interested in the motivational factors underlying females' and males' achievement-related decisions (i.e., educational, and vocational) because of differences of choice patterns between men and women in these fields (Eccles 1994). These scholars noted that theories explaining gender differences in achievement patterns were proliferating but seemed to be disconnected. This observation led them to develop a comprehensive theoretical framework to guide their research by drawing upon conceptual and empirical work related to decision-making, achievement theory, and attribution theory (Crandall 1969; Weiner 1974).

EVT predicts that individuals will choose to participate in, be more persistent at, and consequently perform well in tasks which they believe to be both valuable (i.e., the subjective value attached to the task or domain at hand) and within their abilities (i.e., their self-efficacy or expectancy beliefs of success within the specific domain) (Eccles 1983; Eccles and Wigfield 1995). This theoretical model links achievement-related choices (such as educational, occupational, and acquisition of skills) to 1) expectations for success and 2) importance or value attached to the different choices one believes to be available to oneself. These beliefs, in turn, are linked to cultural norms and individual experiences and aptitudes. The role of socializers is highlighted in this model as their input in terms of gender role beliefs, development of self-concept, and task interpretation is conceptualized to be linked to one's achievement-related beliefs. EVT assumes that socializing factors will influence one's expectations for success as well as the subjective value attached to various achievement-related tasks, which are then hypothesized to influence choice of, persistence at, and achievement of a specific task considering other options (Eccles 1994). To illustrate the framework, Eccles (1994) considers the situation of choosing among various academic courses to enroll in. According to EVT, it would be expected that, when given a choice, individuals would enroll in courses that they think they can succeed (or in which they perceive to have a level of domain-specific self-efficacy) and that they perceive to be valuable for intrinsic or extrinsic reasons. Thus, it would be expected that, given a choice, an individual would choose an advanced math class over an advanced history class if this individual believed s/he could succeed in the math class and if this individual perceived the math class to be more valuable than the history class. Thus, subjective task value and self-efficacy beliefs are conceptualized to be significant predictors of individuals' task choice, persistence, and performance.

Eccles et al. believe that people constantly make conscious and unconscious decisions on how to spend their limited time and energy. These authors argue that the outcome of achievement-related choices (such as educational or occupational pursuits) are often interpreted through the influence of cultural norms and socialization pressures. Thus, EVT conceptualizes gender differences in achievement pursuits as a question of choice, this lens

> "…takes one beyond the question of 'Why aren't women more like men?' to the question 'Why do women and men make the choices they do?' Asking this latter question, in turn, legitimizes the choices that both women and men make […] By legitimizing the choices of both women and men, the model allows us to look at the gender differences from a choice perspective rather than a deficit perspective" (Eccles 1994, p. 589).

Consequently, understanding this process of choice can allow researchers to uncover factors that might serve as facilitators or deterrents for specific choices given our complex social, and gendered, reality.

EVT recognizes that although people do choose among various options, often they do not consciously consider their entire choice set as available when making decisions. Some options, though objectively available, may be, subjectively, not seriously considered. Eccles et al. argue that, among other factors, assimilation of culturally defined gender roles can have a powerful effect on one's view of the world such that activities mentally classified as not part of internalized roles could be, often unconsciously, rejected without serious consideration. Eccles et al. find evidence for this hypothesis in the works of Huston (1983) and Eccles and Hoffman (1984), which suggest that by the age of five, children have already formed clearly defined gender role schemas regarding appropriate behaviors and traits that they should exhibit to and expect from others. Additionally, these schemas seem to not only influence the way current behaviors are monitored, but also how future aspirations will be developed (Eccles and Hoffman 1984; Huston 1983). Thus, according to EVT, gender roles play a significant role in the decision-making process involving achievement related choices, by influencing individuals' perceptions of their full range of options, as well as perceptions of their expectations for success in and subjective value attached to a particular task or domain (Eccles 1994). Following this line of reasoning, I hypothesize that consumers' self-efficacy beliefs in financial matters and the subjective value they attach to this domain will mediate the relationship between gender role ideology and financial literacy as well as the relationship between gender role ideology and willingness to acquire financial knowledge. I discuss each mechanism and its logic in further detail in the following sections.

Financial Self-Efficacy

As previously discussed, EVT predicts that individuals will select and be more persistent at tasks that they believe to be both valuable and within their abilities, which consequently will improve task performance (Eccles and Wigfield 1995). Thus, according to EVT, self-efficacy beliefs are significant predictors of individuals' task choice, persistence, and performance. Self-efficacy refers to the sense of personal agency or expectations that one can achieve and perform well in a specific task, and it is related to self-confidence and motivation (Bandura 1997). Self-efficacy has also been identified as a relevant mediator by early research in achievement and decision-making (e.g., Atkinson 1964; Bandura 1977, 1986; Lewin 1938; Weiner 1974). In the context of occupational choices, early research has linked confidence in a specific domain to related career aspirations (e.g., confidence in mathematics is linked to higher aspirations in math related careers such as engineering) (Betz and Hackett 1986; Hollinger 1983). In line with these findings, it should be noted that according to both EVT and Bandura's theory of self-efficacy, perceptions of efficacy vary by domain. Thus, having general self-efficacy may not be enough to predict performance in a specific domain. Research shows that perceived efficacy beliefs in domain specific contexts contribute to achievement motivation and domain-specific task performance (Bandura and Locke 2003).

Applying this concept to the financial domain, I investigate perceived financial self-efficacy as a mediating variable. Perceived financial self-efficacy refers to domain specific beliefs about one's ability to make effective financial decisions (Lown 2011; Netemeyer et al. 2018). High levels of financial self-efficacy reflect confidence in one's ability to obtain domain-specific information (i.e., financial information) and to make financially sound decisions (Netemeyer et al. 2018). Perceived financial self-efficacy has been shown to affect consumers' financial satisfaction, spending as well as saving behaviors (Chowdhry and Dholakia 2020). Anastasia and Lestaritio (2020) find that financial self-efficacy in women has a positive effect on some financial products ownership such as mortgages. Moreover, consumers with higher financial self-efficacy tend to be more likely to use financial services, leading to financial inclusion (Mindra et al. 2017) and positive financial outcomes (Hoffman and McNair 2019). Perceived financial self-efficacy has also been linked to consumers' avoidance of unfavorable financial behaviors and to increased motivation to meet financial challenges (Hadar, Sood, and Fox 2013; Kammeyer-Mueller, Judge, and Scott 2009). Consistent with EVT, perceived financial self-efficacy has also been linked to increased discipline in persisting at and achieving long-term financial goals (Chen, Gully, and Eden 2001; Chowdhry and Dholakia 2020).

According to EVT, beliefs about one's ability to excel at a task are a function of the characteristics of the task as well as one's goals and self-schema (beliefs about oneself in the world). I hypothesize that holding a traditional gender role ideology will result in negative beliefs about one's expectations for success in domains that are inconsistent with traditional gender roles, thus reducing domain specific efficacy beliefs, which will subsequently lead to lower task performance in the domain, as well as less likelihood of persisting at the domain-specific task. Following this line of reasoning, I propose that financial self-efficacy will mediate the relationship between gender role ideology and financial literacy, as well as between gender role ideology and willingness to acquire financial knowledge. Formally stated,

H5a: Financial self-efficacy mediates the relationship between gender role ideology and willingness to acquire financial knowledge such that the more traditional a consumer's gender-role ideology is, the less financial efficacious the consumer will be. Meanwhile, the more financial efficacious the consumer is, the more willing the consumer will be to acquire financial knowledge.

H5b: Financial self-efficacy mediates the relationship between gender role ideology and financial literacy such that the more traditional a consumer's gender-role ideology is, the less financial efficacious the consumer will be. Meanwhile, the more financial efficacious the consumer is, the more financial literate the consumer will be.

Subjective Value

Subjective task value is the second major mechanism theorized in EVT. As noted earlier, individuals' achievement-related choices are influenced both by their efficacy beliefs and the value attached to the various options believed to be available. Eccles et al. find additional support for the hypothesized role of subjective task value in the early work of Benbow and Stanley (1982; 1984) and Benbow and Minor (1986) who find that liking a specific domain such as math or language was predictive of course enrollment throughout high school and college among gifted students. Subjective task value has been conceptualized as being an inherent aspect of any endeavor that influences the likelihood of whether an individual will choose to pursue the endeavor.

Eccles and Wigfield (1995) provide a detailed discussion of their conceptualization of subjective task value. They begin by providing early definitions of subjective task value as the incentive value of anticipated success or the pride people may feel from attaining a goal (Atkinson 1957; Rotter 1982). Other motivational theorists defined task value based on importance attached to the attainment of a goal and its objective difficulty (Battle 1966; Crandall

1969). Eccles and colleagues (Eccles 1983; Parsons and Goff 1980) build also on Rokeach's (1980) and Feather's (1982) work, which posits that psychological value systems influence the valence that people attach to certain tasks which could lead to approach or avoidance of the task, to offer a comprehensive definition and identify subcomponents of subjective task value.

Eccles and Wigfield (1995) posit that task value is determined by:

> "…characteristics of the task itself; by the broader needs, goals, values, and motivational orientations of the individual; and by affective memories associated with similar tasks in the past. The degree to which a particular task can fulfill needs, confirm central aspects of one's self-schema, facilitate reaching goals, affirm personal values, and/or elicit positive versus negative affective associations and anticipated states is assumed to influence the value a person attaches to engaging in that task" (p. 216).

Based on this definition, EVT predicts that people will be more likely to engage, persist, and perform well at tasks that they find valuable. Moreover, it is hypothesized that gender differences in task value resulting from different value systems derived from gender socialization will predict gender differences in educational, occupational, and leisure activities (Parsons and Goff 1980).

Further, Eccles (1983) identify four subcomponents of subjective task value and break it down to attainment value, intrinsic value, utility value, and cost. In line with Battle's (1966) definition, attainment value is the personal importance one attaches to doing well on a specific task. Eccles (1983) draw from self-schema and identity theories (Markus and Wurf 1987) to link attainment value to

"…the relevance of engaging in a task for confirming or disconfirming salient aspects of one's self-schema (i.e., because tasks provide the opportunity to demonstrate aspects of one's actual or ideal self-schema, such as masculinity, femininity, and/or competence in various domains, tasks will have higher attainment value to the extent that they allow the individual to confirm salient aspects of these self-schemata)" (Eccles and Wigfield 2002, p. 119).

Thus, it is hypothesized that, attainment value is derived from the fit that people perceive between task characteristics and those concepts that they perceive to be central to their self-schema or 'ought self' (Eccles and Wigfield 2020). For instance, having a traditional gender role ideology would lead an individual to place higher value on tasks that are perceived to be consistent with traditional gender roles and lower value to those perceived to be inconsistent. If the financial domain is perceived to be inconsistent with traditional social roles ascribed to women, then it is speculated that subjective task value, specifically attainment value, will mediate the relationship between gender role ideology and willingness to acquire financial knowledge, and the relationship between gender role ideology and financial literacy:

H6a: Subjective value mediates the relationship between gender role ideology and willingness to acquire financial knowledge such that the more traditional a consumer's gender-role ideology is, the less subjective value the consumer will attach to financial matters. Meanwhile, the more subjective value the consumer attaches to financial matters, the more willing the consumer will be to acquire financial knowledge.

H6b: Subjective value mediates the relationship between gender role ideology and financial literacy such that the more traditional a consumer's gender-role ideology is, the less subjective value the consumer will attach to financial matters. Meanwhile, the more subjective value the consumer attaches to financial matters, the more financial literate the consumer will be.

The Moderating Role of Gender Identity, Peers' Influence, and Parents' Influence

Examining moderating variables helps understand "for whom?" and "under which conditions?" do the proposed relationships hold. As boundary conditions for the model, I propose to examine psychological and socializing factors. As discussed in the beginning of this chapter, *sex* and *gender* are not the same and an individual might exhibit a differing gender identity from the one that has been historically socialized with their sex. Thus, to further examine the interplay between gender and gender role ideology, and their effects on the downstream variables, I propose to examine masculine gender identity as a boundary condition. Additionally, social agents can often encourage or discourage behaviors and influence beliefs (Eccles 1994). Thus, in addition to masculine gender identity, I propose to examine how the influence of parents and peers regarding financial matters influences the hypothesized relationships between gender role ideology and willingness to acquire financial knowledge, financial literacy, subjective value attached to financial matters, and financial self-efficacy. I discuss each variable in further detail in the following section.

Gender Identity

Earlier in this discussion I made the distinction between sex and gender. Deaux (1985) defines gender identity as the extent to which a person identifies with masculine or feminine traits. It refers to an individual's psychological gendered make-up rather than their biological sex (Stets and Burke 1999). Gender identity is a social construct where masculine and feminine associations are socialized through cultural rearing (Palan 2001), and it has been viewed as one of the most important social identities held by consumers (Bem 1981). Gender identity helps conceptualize our experiences and guide our social actions (Choi and Fuqua 2003; Spence 1993). Research finds that gender identity provides additional explanatory potential beyond that of biological sex, which might fail to capture psychological differences that exist between (and within) the sexes in consumer behavior (Feiereisen, Broderick, and Douglas 2009; Ye, Bose, and Pelton 2017). Studies have shown that gender identity explains differences in shopping behavior (Fischer and Arnold 1994), ethical consumption (Brough et al. 2016; Pinna 2020), household decision-making (Qualls 1987), gift giving (Weisfeld-Spolter, Rippé, and Gould 2015), and information search behavior (Ramkissoon and Nunkoo 2012).

Previously, behavioral differences between women and men were thought to be biologically determined and 'healthy' individuals were those who conformed to socially accepted gender traits that were congruent with their biological sex (e.g., feminine = women and masculine = men) (Stern 1988). Gender identity was conceptualized as a unidimensional construct with masculinity and femininity as polar ends of a single continuum (Ulrich and Tissier-Desbordes 2013). Bem's (1974) seminal work on gender identity contested this dichotomy and separated masculinity and femininity, conceptualizing them as orthogonal constructs which are not biologically determined and can simultaneously exist in varying degrees in a person's psychological make-up (Gill et al. 1987). For example, communal orientations, expressiveness, and prosocial behaviors have been associated with feminine gender identity (Bussey 2011), while self-aggrandizement, solidarity-mindedness, and instrumentality have been associated with masculine gender identity (Spence 1993). Additionally, traits like independence, assertiveness, and need to dominate are considered highly masculine (Palan 2001), whereas caring, understanding, and nurturance are thought to be highly feminine (Keller 1983). I argue that women possessing high masculine gender traits will be more rigid in their beliefs about appropriate societal gender roles for men and women, thus holding a traditional ideology may further exacerbate the negative effect of gender role ideology. Formally:

> H7a-d: Masculine gender identity strengthens the negative relationship between gender-role ideology and **(a)** willingness to acquire financial knowledge; **(b)** financial literacy; **(c)** subjective value attached to financial matters; and **(d)** financial self-efficacy.

Parents' and Peers' Influence Regarding Financial Matters

As pointed out by Eccles, Jacob, and Harold (1990) as well as socialization theory (Moschis 1987), socializers (e.g., family, work, school etc.) play an important role in an individual's development of beliefs in various domains. For example, people are likely to model behaviors and ideas frequently exposed to them in their social and cultural milieu (Bandura 1986). I posit that an individual's social environment, specifically parents and peers, will play a role in their financial socialization (Shim et al. 2010), that is, the social process by which they acquire financial knowledge. Indeed, parents are the primary socializers through which consumers learn how to navigate the marketplace and manage their finances (Moschis and Churchill 1978; Webley and Nyhus 2006).

Research has found that parents influence financial socialization through explicit and implicit learning (Shim et al. 2009; Jorgensen and Savla 2010). For example, Shim et al. (2010; 2009) have examined how parental teachings and behaviors, as well as work experience and financial education during high school, contribute to first year college students' financial learning, attitudes, and behaviors. Findings from Shim and colleagues suggest that parental financial teachings and behaviors significantly influenced students' financial knowledge and financial behaviors. Specifically, these authors find that increased parental teachings improved students' financial knowledge but did not predict positive financial behaviors. Increased observed parental financial behaviors, on the other hand, had a positive relationship to students' financial behaviors (Shim et al. 2010; 2009). Moreover, research shows that a lack of discussion of financial matters with family was associated with problematic credit card use (Pinto, Parente, and Mansfield 2005).

While the role of parents has been examined, scholars have underscored the importance of revaluating parents' influence on financial socialization. Specifically, focusing on "how" parents influence the acquisition of financial knowledge rather than "why", and emphasizing the interaction between parental influence and other socializing agents (van Campenhout 2015; Sohn et al. 2012). Similarly, the role of peers' financial influence has received less attention, and researchers have called for more work to examine this variable (Shim et al. 2010). Eccles (1994) points out the importance of both parents' and peers' influence on the perceptions of available achievement options, positing that withholding or providing support for specific endeavors might alter the viability that individuals ascribe to these endeavors. Parents' and peers' influence are conceptualized in this research as women's perceptions of the engagement that their parents and peers have in their own acquisition of financial knowledge. Thus, I hypothesize that having socializers in the form of parents and peers that provide positive financial influence will mitigate the negative relationship that gender role ideology might have with the downstream variables. Formally:

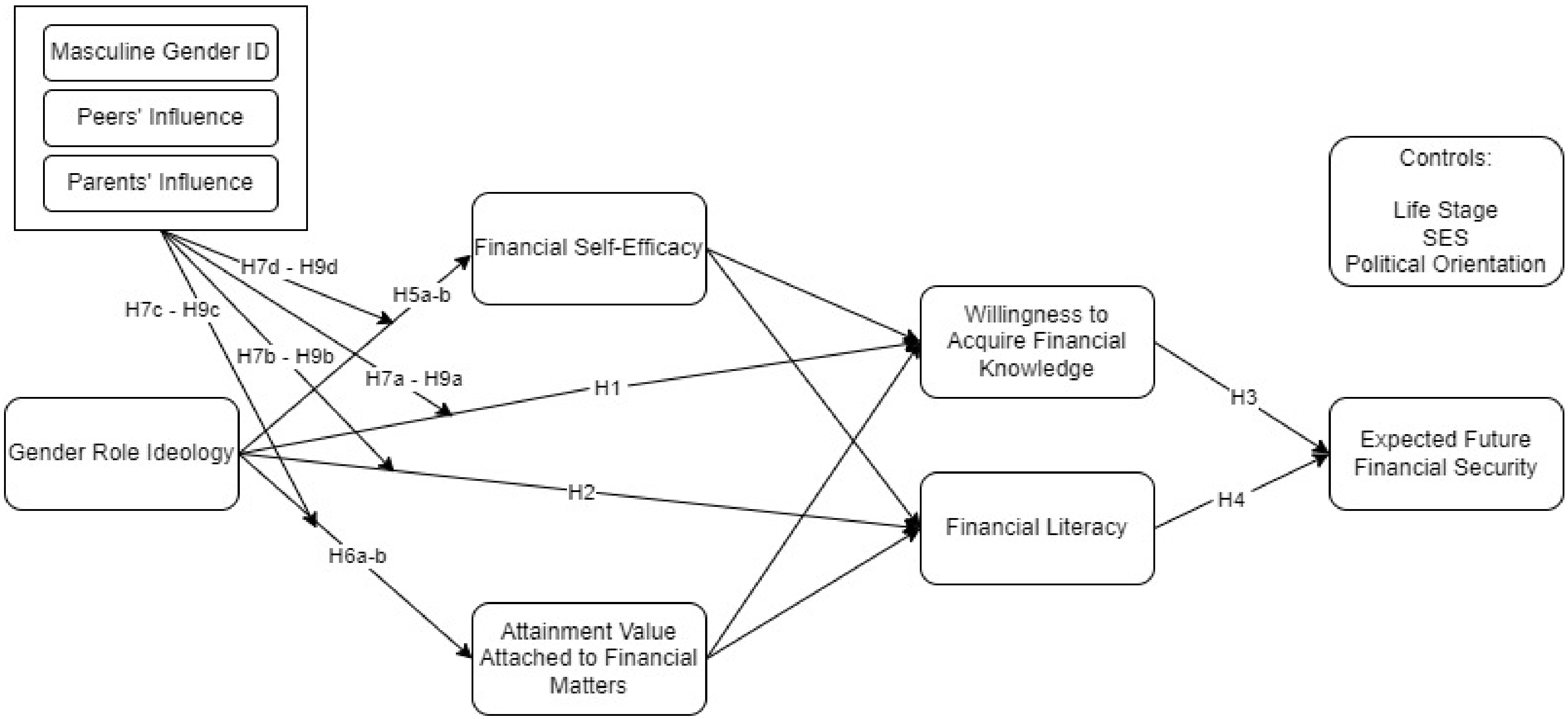
H8a-d: Peers' influence dampens the negative relationship between gender-role ideology and **(a)** willingness to acquire financial knowledge; **(b)** financial literacy; **(c)** subjective value attached to financial matters; and **(d)** financial self-efficacy.

H9a-d: Parents' influence dampens the negative relationship between gender-role ideology and **(a)** willingness to acquire financial knowledge; **(b)** financial literacy; **(c)** subjective value attached to financial matters; and **(d)** financial self-efficacy.

H1-9 are depicted in Figure 1.

Having discussed the relevant literature and presented the theoretical framework and research hypotheses, I now turn to Chapter III: Methodology and Results where I will discuss the method adopted to test the research hypotheses, the sample used to test them, the validity and reliability of the measures, the analytical tools used to analyze the data, and the results from these analyses.

Figure 1. Conceptual Model



CHAPTER III

METHODOLOGY

This chapter discusses the methodology I employed to carry out my research. I first present Study 1, a survey-based study that aimed to test the theoretical framework. The discussion of Study 1 includes the aim of the study, how it was carried out, the characteristics of the sample, the measures I employed, a description of control variables, the assessment of the measurement model, the validity and reliability of the measures, the extent to which common method variance affects the study, and results of hypotheses testing including analyses for direct relationship testing, mediation analysis, and moderation analysis. I then turn to Study 2, a scenario-based experiment that aimed to further examine the relationships between gender role ideology and the dependent variables.

Study 1

Study 1 aims to test the structurally complex relationships presented in the theoretical framework. To this end, I employ a survey-based research design to collect data and structural equation modelling to analyze it. In the following sections, I describe data collection procedure, measures, control variables, sample characteristics, measurement model assessment, common method bias tests, and hypotheses testing results. Study 1 findings are also discussed.

Procedure

I created an online survey questionnaire and distributed through MTurk. The survey was anonymous, and participants were able to respond to it from their personal devices. The respondents were first shown a brief description of the study followed by consent questions. Only if participants stated that they consented to respond to the survey, and that they were 18 years or older, were they directed to the questionnaire. To reduce social desirability bias, I followed survey design recommendations from Larson (2019), Fowler (1995), and Podsakoff, MacKenzie, and Podsakoff (2012). Mainly, I emphasized subject anonymity, included statements that encouraged honesty (e.g., "try to answer as honestly as possible), provided instructions that emphasize legitimacy of all possible answers (e.g., "there are no right or wrong answers), and provided instructions that enhanced desire for self-expression (e.g., "we value your opinion). Moreover, for sensitive items, I changed the scale anchors from 'strongly agree – strongly disagree' to 'completely true – completely false' in order to minimize the affective component in responses.

Sample Characteristics

A total of 411 MTurk workers participated in the study for monetary compensation. Of these participants, 154 identified as women and comprised the sample for the data analysis and hypothesis testing. More than half of these 154 respondents (56.5%) were between 18 and 40 years of age, with 70.7% holding a bachelor's or a more advanced degree. Nearly sixty percent (57.1%) had a household income of $50,000 or higher and most were married (72.1%). 79.2% of the respondents were White, followed by African American (12.3%), Asian (3.2%), Hispanic or Latino (1.9%), and American Indian and other ethnicities (3.2%).

Measures

To measure the constructs, I both adopted and adapted previously established scales and used newly developed items where needed. Gender role ideology was measured by adopting six items from Baber and Tucker's (2006) Social Roles Questionnaire (SRQ). Parents' influence regarding financial matters was measured by adopting three items from Shim et al. (2010). Masculine gender identity was measured by adopting eight items from Schertzer et al. (2008) based on Bem's (1974) work. Perceived financial self-efficacy and expected future financial security were measured by adopting six and five items respectively from Netemeyer et al. (2018). Attainment value attached to financial matters was measured by adapting three items from Eccles and Wigfield (1995). Financial literacy was measured by adopting three items from Lusardi and Mitchell (2014). Peers' influence regarding financial matters and willingness to acquire financial knowledge were measured by three and six newly developed items respectively. All items, except for the financial literacy items, were presented in a 7-point Likert scale format. The financial literacy items were presented as multiple-choice questions, as designed by Lusardi and Mitchell. Please see Table 1 for the complete list of items.

Table 1. Measurement Items

Code	Items	Source
	Gender Role Ideology	
GRI1	Mothers should make most decisions about how children are brought up.	Baber and Tucker (2006)
GRI2	Mothers should work only if necessary.	
GRI3	Girls should be protected and watched over more than boys.	
GRI4	A father's major responsibility is to provide financially for his children.	
GRI5	Some types of work are just not appropriate for women.	
GRI6	Only some types of work are appropriate for both men and women.	
GRI7	For many important jobs, it is better to choose men instead of women.	
	Parents' Influence Regarding Financial Matters	
PRNT1	My parents spoke to me about the importance of saving.	Shim et al. (2010)
PRNT2	My parents taught me how to use a credit card appropriately.	
PRNT3	My parents discussed how to establish a good credit rating.	
	Masculine Gender Identity	
	How often do you describe yourself as…?	
GIDM1	A person with leadership abilities.	Schertzer et al. (2008)
GIDM2	A person willing to take a stand.	
GIDM3	A competitive person.	
GIDM4	A forceful person.	
GIDM5	An assertive person.	
GIDM6	An ambitious person.	
GIDM7	A person with a strong personality.	
GIDM8	A person who acts like a leader.	
	Perceived Financial Self-Efficacy	
EFF1	I know the right sources to consult to make wise financial decisions.	Netemeyer et al. (2018)
EFF2	I know how to make complex financial decisions.	
EFF3	When it comes to money, I know how to be disciplined.	
EFF4	I am able to make good financial decisions that are new to me.	
EFF5	I know how to make myself save.	
EFF6	I am able to recognize a good financial investment.	
	Expected Future Financial Security	
WB1	I am becoming financially secure.	Netemeyer et al. (2018)
WB2	I am securing my financial future.	
WB3	I will achieve the financial goals that I have set for myself.	
WB4	I have saved (or will be able to save) enough money to last me to the end of my life.	
WB5	I will be financially secure until the end of my life.	
	Attainment Value Attached to Financial Matters	
SUB3	I believe learning about finances is worth the effort.	Eccles and Wigfield (1995)
SUB4	To me, being good at financial decision-making is important.	
SUB5	I believe doing well in financial matters is important.	

Table 1. Continued

	Financial Literacy	
FLIT1	Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money grow?	Lusardi and Mitchell (2014)
FLIT2	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, would you be able to buy:	
FLIT3	Do you think that the following statement is true or false? "Buying a single company stock usually provides a safer return than a stock mutual fund".	
	Willingness to Acquire Financial Knowledge	
WILL1	Take a financial investment course.	Newly developed
WILL2	Attend a money management workshop.	
WILL3	Search for information on how to maintain a good credit score.	
WILL4	Talk to a financial advisor to lean more about stock options.	
WILL5	Find resources to improve budgeting skills.	
WILL6	Find ways to improve my knowledge of personal finances in general.	
	Peers' Influence Regarding Financial Matters	
PEER1	It's normal for my friends and I to give each other financial advice.	Newly developed
PEER2	My financial decisions are sometimes influenced by my friends' recommendations.	
PEER3	I have gotten better at managing my finances thanks to the advice of my friends.	

Control Variables

To increase the robustness of the findings, I included life stage, socio-economic status, and political orientation as control variables in the analysis as it relates to financial literacy based on previous relevant research (e.g., Bucher-Koenen and Lusardi 2011; Finke, Howe, and Huston 2016; Lusardi and Mitchell 2007a, 2014; Lusardi, Mitchell, and Curto 2010).

Different life stages are associated with different financial responsibilities. For example, in the transition from adolescence to early adulthood, most individuals tend to experience financial independence to some degree. From early adulthood to adulthood, most individuals tend to acquire more financial responsibilities in terms of contributing to retirement, purchasing a home, forming a family, etc. Similarly, from adulthood to late adulthood, most individuals tend to transition from a work life to retirement or experience changes in family structure such as the loss of a spouse. Each transition and life stage tends to be marked by specific life events that could potentially influence people's financial needs and behaviors (Arnett 2004; Levinson 1978, 1996). To measure life stage, I used the age ranges that Levinson (1978, 1996) associates with developmental periods and transitions in life cycle. Specifically, early adult transition (ages 18 to 21), entering the adult world (ages 22 to 27), age 30 transition (ages 28 to 32), settling down (ages 33 to 39), mid-life transition (ages 40 to 44), entering middle adulthood (ages 45 to 49), age 50 transition (ages 50 to 54), culmination of middle adulthood (ages 55 to 59), late adult transition (ages 60 to 64), and late adulthood (ages 65 and above). I coded each age group in a sequential manner where 1 represents the youngest age group to 11 representing the oldest age group.

Similarly, socio-economic status (SES) could be tied to differences in opportunities to acquire financial knowledge (e.g., higher SES could mean having the ability and opportunity to handle long-term financial investments compared to lower SES) (Lusardi and Mitchell 2014). SES was measured by creating a composite measure to capture participants' level of education, income, and occupational status. Education was measured by highest degree earned and was coded into eight categories where 1 = less than high school, 2 = high school diploma or GED, 3 = associates degree, occupational, 4 = associates degree, academic, 5 = bachelor's degree, 6 = master's degree, 7 = professional degree, and 8 = doctoral degree. Income class was coded into seven categories where 1 = less than $25,000, 2 = $25,000 to $34,999, 3 = $35,000 to $49,999, 4 = $50,000 to $74,999, 5 = $75,000 to $99,999, 6 = $100,000 to $149, 999, and 7 = $150,000 or more. Occupation class was coded into three categories where 1 = blue collar/service (e.g., laborer, barber, waiter), 2 = clerical (e.g., cashier, secretary, bank teller, teacher's aide), 3 = managerial/professional (e.g., accountant, computer specialist, nurse, physician). Distributions of these variables are shown in Table 2. A composite measure of education, income, and occupation was created by standardizing each variable and averaging them. This approach addresses the three traditional components of SES (education, income, occupation). Women who were not engaged in paid employment, including those who identified themselves as students (*n* = 1, .6%), homemakers (*n* = 3, 1.9%), or unemployed (*n* = 3, 1.9%), were not given a value for occupation class. Therefore, their SES score was based solely on household income and education.

Table 2. Demographic Characteristics

Code	Demographic Characteristic	n	Percentage
ETH	***Ethnicity***		
1	American Indian or Alaska Native	1	.6%
2	Asian or Asian American	5	3.2%
3	Black or African American	19	12.3%
4	Hispanic or Latino	3	1.9%
5	Middle Eastern or Northern African	-	-
6	Native Hawaiian or Other Pacific Islander	-	-
7	White	122	79.2%
8	Other	-	-
9	Mix	4	2.6%
EDU	***Education***		
1	Less than high school	-	-
2	High school diploma or GED	22	14.3%
3	Associates degree, occupational	6	3.9%
4	Associates degree, academic	17	11%
5	Bachelor's degree	81	52.6%
6	Master's degree	27	17.5%
7	Professional degree	-	-
8	Doctoral degree	1	.6%
INC	***Income***		
1	Less than $25,000	25	16.2%
2	$25,000 - $34,999	18	11.7%
3	$35,000 - $49,999	23	14.9%
4	$50,000 - $74,999	48	31.2%
5	$75,000 - $99,999	22	14.3%
6	$100,000 - $149,999	13	8.4%
7	$150,000 or more	4	2.6%
8	Prefer not to answer	1	.6%
OCC	***Occupation***		
1	Blue collar/service (e.g., laborer, barber, waiter)	25	16.2%
2	Clerical (e.g., cashier, secretary, bank teller, teacher's aide)	48	31.2%
3	Managerial/professional (e.g., accountant, computer specialist, nurse, physician)	78	50.6%
4	Homemaker or never employed	3	1.9%
MARI	***Marital Status***		
1	Single	26	16.9%
2	In a committed relationship	12	7.8%
3	Married	111	72.1%
4	Separated	-	-
5	Divorced	3	1.9%
6	Widowed	2	1.3%

Table 2. Continued

EMP	***Employment***		
1	Unemployed	3	1.9%
2	Student	1	.6%
3	Employed part-time	12	7.8%
4	Employed full-time	118	76.6%
5	Self-employed	16	10.4%
6	Retired	4	2.6%
AGE	***Age***		
1	18 – 21	1	.6%
2	22 – 27	23	14.9%
3	28 – 32	25	16.2%
4	33 – 39	38	24.7%
5	40 – 44	16	10.4%
6	45 – 49	10	6.5%
7	50 – 54	12	7.8%
8	55 – 59	11	7.1%
9	60 – 64	12	7.8%
10	65 and above	6	3.9%

Lastly, I also controlled for participants' political orientation. Political orientation (or ideology) is defined as "an interrelated set of attitudes and values about proper goals of society and how they should be achieved" (Tedin 1987, p. 65). I understand this variable as having conservatism and liberalism at each end of the spectrum. In line with Kidwell, Farmer, and Hardesty (2013) and Irmak, Murdock, and Kanuri (2020), I adapted Nail et al.'s (2009) approach to measure political orientation and asked participants about their attitudes towards contemporary political and economic issues and systems (i.e., increased military spending, socialism [reverse coded], capitalism, and universal income [reverse coded]). These questions were presented on a 7-point Likert scale where 1 = very unfavorable and 7 = very favorable (Cronbach's $\alpha = .555$). I reverse coded the liberal items so that higher levels of all items indicated greater conservatism cohesively.

Measurement Model Assessment

Confirmatory Factor Analysis (CFA) was computed using AMOS to test the measurement model. As part of CFA, factor loadings were assessed for each item. Seven items (EFF6, GIDM4, GIDM3, GIDM6, WILL4, WILL6, and GRI7) were removed due to them being correlated to three or more items in more than one construct based on Modification Indices from Regression Weights. Two additional items (EFF5 and EFF3) were removed due to having factor loadings lower than .7 (.619 and .607, respectively). The Modification Indices recommended dividing the Expected Future Financial Security factor. Upon inspection of the items, it made conceptual sense to group items WB1, WB2, and WB3 together into one factor. The second factor contained the items WB4 and WB5. Upon further inspection of this factor, it was determined that without the three items in the first factor, this second factor no longer presented adequate face validity and thus only the first factor was kept for further analyses.

Several model fit indices were used to assess the model's fit (Bentler 1990; Hu and Bentler 1998;Ullman 2001) (Table 3). Although GFI did not meet the established threshold, in their review of the use of structural equation modelling in marketing and consumer research, Baumgartner and Homburg (1996) find that "a sizeable proportion of published models in marketing falls short of what Browne and Cudeck (1993) call reasonable fit, when assessing GFI, AGFI, BBI, TLI, and CFI values below .90" (p. 153). The authors argue that model complexity is "an important factor contributing to the contingent nature of goodness-of-fit assessments, and suggest that general rules of thumb (e.g., that GFI be greater than .90) may be misleading because they ignore such contingencies" (p. 153). On the positive side, they note that $\chi 2/df$ and RMSEA seem to be effective in controlling for model complexity by assessing fit per degree of freedom. Since the obtained $\chi 2/df$, RMSEA and the rest of the values are within the established thresholds, I conclude that my model shows average fit within our discipline.

Table 3. Fit Indices

Fit Indices	Threshold	Source(s)	Obtained Value
p	Insignificant	Bagozzi and Yi (1988)	***
χ^2/df	< 5	Schumacker and Lomax (2004); Ullman (2001)	1.634
GFI	> .90	Hair et al. (2010)	.795
CFI	> .90	Bentler (1990)	.931
TLI	> .90	Bentler (1990)	.921
SRMR	< .08	Hu and Bentler (1998)	.055
RMSEA	< .08	Hu and Bentler (1998)	.064

Reliability and Validity

Construct reliability was assessed using Cronbach's Alpha (α) and Composite Reliability (CR). All Cronbach's alpha and CR values were found to be over the required limit of .70 (Nunnally and Bernstein 1994; Hair et al. 2010). Hence, construct reliability was established for all measures (Table 4). Convergent validity was estimated using Average Variance Extracted (AVE) (Fornell and Larcker 1981). AVE values for all constructs were above the threshold value of .50 (Fornell and Larcker 1981). Therefore, convergent validity was established for all measures (Table 3).

Table 4. Loadings, Reliability, and Convergent Validity

Code	Items	Loadings	α	CR	AVE
	Expected Future Financial Security		***.883***	***.890***	***.732***
WB1	I am becoming financially secure.	.896			
WB2	I am securing my financial future.	.921			
WB3	I will achieve the financial goals that I have set for myself.	.738			
	Masculine Gender Identity		***.907***	***.911***	***.672***
	How often do you describe yourself as…?				
GIDM1	A person with leadership abilities.	.860			
GIDM2	A person willing to take a stand.	.753			
GIDM5	An assertive person.	.759			
GIDM7	A person with a strong personality.	.838			
GIDM8	A person who acts like a leader.	.878			
	Parents' Influence Regarding Financial Matters		***.880***	***.885***	***.721***
PRNT1	My parents spoke to me about the importance of saving.	.749			
PRNT2	My parents taught me how to use a credit card appropriately.	.910			
PRNT3	My parents discussed how to establish good credit rating.	.880			
	Attainment Value Attached to Financial Matters		***.821***	***.826***	***.613***
SUB3	I believe learning about finances is worth the effort.	.773			
SUB4	To me, being good at financial decision-making is important.	.840			
SUB5	I believe doing well in financial matters is important.	.733			
	Peers' Influence Regarding Financial Matters		***.931***	***.934***	***.825***
PEER1	It's normal for my friends and I to give each other financial advice.	.861			
PEER2	My financial decisions are sometimes influenced by my friends' recommendations.	.954			
PEER3	I have gotten better at managing my finances thanks to the advice of my friends.	.908			
	Gender Role Ideology		***.922***	***.918***	***.652***
GRI1	Mothers should make most decisions about how children are brought up.	.763			
GRI2	Mothers should work only if necessary.	.878			
GRI3	Girls should be protected and watched over more than boys.	.874			
GRI4	A father's major responsibility is to provide financially for his children.	.727			
GRI5	Some types of work are just not appropriate for women.	.774			
GRI6	Only some types of work are appropriate for both men and women.	.815			

Table 4. Continued

	Financial Self-Efficacy		***.809***	***.814***	***.595***
EFF1	I know the right sources to consult to make wise financial decisions.	.736			
EFF2	I know how to make complex financial decisions.	.849			
EFF4	I am able to make good financial decisions that are new to me.	.722			
	Willingness to Acquire Financial Knowledge		***.900***	***.901***	***.696***
WILL1	Take a financial investment course.	.916			
WILL2	Attend a money management workshop.	.918			
WILL3	Search for information on how to maintain a good credit score.	.733			
WILL5	Find resources to improve budgeting skills.	.752			

Discriminant validity was assessed using the Fornell and Larcker criterion and Heterotrait-Monotrait (HTMT) ratio. According to the Fornell and Larcker criterion, discriminant validity is established when the square root of AVE for a construct is greater than its correlation with the other constructs in the study. However, the Fornell and Larcker criterion has recently been criticized and HTMT ratio has emerged as a new method to assess discriminant validity. In the present study, discriminant validity is established using both methods. As shown in Table 5, the square roots of all AVEs are greater than inter-construct correlations. Similarly, Table 6 shows that all HTMT ratios were less than the required limit of .850 (Henseler, Ringle, and Sarstedt 2015). Hence, discriminant validity for all measures was established.

Table 5. Discriminant Validity Assessment Through Fornell and Larcker Criterion

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Gender Role Ideology	**.807**							
(2) Financial Self-Efficacy	.262**	**.771**						
(3) Parents' Influence Regarding Financial Matters	.460***	.378***	**.849**					
(4) Peers' Influence Regarding Financial Matters	.560***	.451***	.515***	**.908**				
(5) Willingness to Acquire Financial Knowledge	.618***	.392***	.463***	.723***	**.834**			
(6) Masculine Gender Identity	.523***	.554***	.423***	.590***	.529***	**.820**		
(7) Expected Future Financial Security	.369***	.593***	.432***	.482***	.457***	.469***	**.855**	
(8) Attainment Value Attached to Financial Matters	-.020	.508***	.057	.102	.227*	.275**	.481***	**.738**

Bold numbers on the diagonal represent the square root of AVEs. Numbers on the off diagonal represent inter-construct correlations
Significance of correlations: * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

Table 6. Discriminant Validity Assessment Through HTMT Ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Gender Role Ideology								
(2) Financial Self-Efficacy	.259							
(3) Parents' Influence Regarding Financial Matters	.456	.379						
(4) Peers' Influence Regarding Financial Matters	.554	.452	.516					
(5) Willingness to Acquire Financial Knowledge	.613	.392	.464	.725				
(6) Masculine Gender Identity	.518	.555	.424	.590	.530			
(7) Expected Future Financial Security	.365	.595	.433	.483	.459	.469		
(8) Attainment Value Attached to Financial Matters	-.019	.509	.057	.102	.227	.168	.482	

Common Method Variance

Common method variance (CMV) is a concern in survey-based research designs (Podsakoff et al. 2003). Research shows that when respondents reply to items measuring dependent and independent variables at the same time, covariation in results could be artificially inflated leading to bias in parameter estimates (Collier 2020). Several tests have been developed to estimate the extent to which results from a study suffer from CMV, such as Harman's Single Factor Test, Common Latent Factor Test, and the CFA Marker Variable Technique (Collier 2020). Williams, Hartman, Cavazotte (2010) have argued that the CFA Marker Variable Technique offers a more robust assessment of CMV than Harman's Single Factor Test and Common Latent Factor Test if the correct marker variable is used. In this study, I assessed the extent of CMV present in my results by conducting first a marker variable test then a Harman's Single Factor and Common Latent Factor test. Results from the CFA marker variable test did not show significant presence of CMV, however, given that the marker variable was measured by newly developed items, I conduct the additional tests to ensure robustness of results. I discuss each test below.

Marker Variable Technique. I tested the degree to which common method bias may be affecting my model using the marker variable technique presented in Williams, Hartman, and Cavazotte (2010). This technique requires the researcher to introduce an a priori chosen variable which is theoretically unrelated to any construct in the study (i.e., marker variable). Literature recommends that an ideal marker variable should be 1) chosen a priori, 2) theoretically unrelated to substantive variables, and 3) be subject to the same biases that the substantive variables are subject to (Lindell and Whitney 2001; Podsakoff et al. 2003; Simmering et al. 2015; Spector et al. 2019). With this criteria in mind, I asked respondents about the importance they ascribed to oral hygiene (three items on a 7-point Likert scale [e.g., "oral hygiene is extremely important for me," and "I make flossing a priority in my daily routine."]), which should not relate meaningfully, in both a theoretical and empirical sense, to my constructs of interest but it could still be subject to social desirability bias.

Following Williams, Hartman, and Cavazotte (2010), I conducted a CFA with the marker variable included to build a baseline model. I then compared this model to a constrained model (Method-C), an unconstrained model (Method-U), and a restricted model (Method-R). The model fit results of each model are shown in Table 7. The CFI values for the CFA and baseline model did not reach the .90 threshold, but this could be the result of the large number of indicators and constrained parameters. I compared the Baseline Model and the Method-C model to test that the marker variable's method factor loadings were not related to the substantive indicators. I then compared the chi-square difference between the Baseline Model and the Method-C model. As shown in Table 7, the comparison yields a chi-square difference of 3.236 with one degree of freedom, which falls below the 0.05 chi-square critical value for one degree of freedom of 3.84, suggesting that there is no significant evidence of shared common method variance between the indicators of the substantive variables and those of the marker variable. Further examination of the comparison between Method-C and Method-R models provides additional evidence to conclude that whatever minimal amount of CMV might be present does not skew the relationships among the substantive variables. Thus, I conclude that the CFA marker variable test did not show evidence of significant CMV present in my study. However, given that the items that I used to measure the marker variable were not taken from a previously validated scale, I also conducted a Harman's Single Factor test and a Common Latent Factor test to ensure robustness of results.

Table 7. χ^2, Goodness-Of-Fit Values, and Model Comparison Tests

Model	χ^2	*df*	CFI
1. CFA	856.008	458	.894
2. Baseline	937.66	472	.876
3. Method-C	934.424	471	.876
4. Method-U	801.562	442	.904
5. Method-R	807.184	470	.910
Chi-Square Model Comparison Tests			
Δ Models	**Δ χ^2**	**Δ *df***	***p*-value**
1. Baseline vs. Method-C	3.236	1	.072
2. Method-C vs. Method-U	132.862	29	***
3. Method-U vs. Method-R	5.622	28	.999

Significance at * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

Note. CFA = confirmatory factor analysis; CFI = comparative fit index; U = unconstrained; C = constrained; R = restricted

Harman's Single Factor Test. In addition to the marker variable approach, I performed a Harman single factor test as well as a common latent factor (CFL) test (Podsakoff et al., 2003). For the Harman single factor test, I constrained the number of factors in an exploratory factor analysis with all measurement items included to one and then examined the variance explained by this first factor for the unrotated factor solution. The variance for the factor was 35.704% and thus substantially below the threshold of 50 per cent. Additionally, I performed a CFA where all indicators were purposely loaded on one factor. The single factor model showed a substantially poor model fit (χ^2/df = 5.124; GFI = .466; CFI = .521; TLI = .484; SRMR = .132; RMSEA = .164), thus suggesting that common method bias in the model, albeit possibly existent, should be minimal (Collier 2020). While researchers (Fuller et al. 2016) have argued that Harman's single factor test is sensitive enough determine if a problem exists, others have questioned this approach and have concluded that it is insufficient to determine if common method bias is present (Chang, van Witteloostuijn, and Eden 2010; Malhorta, Patil, and Kim 2007).

Common Latent Factor Test. To account for this sensitivity criticism, I also performed a CFL test. I added a common latent factor in the CFA model that connected to all measurement items (Williams and McGonagle 2016). I then constrained all the relationships from the common method factor to be equal and set its variance to 1 (Collier 2020). I subsequently compared the χ^2 values the original model ($\chi^2_{ORIGINAL}$ = 614.401) and the CFL model (χ^2_{CFL} = 576.731). The difference between these values ($\chi^2_{ORIGINAL}$ - χ^2_{CFL} = 37.62) exceeds the critical value of 3.84 at 1 degree of freedom, indicating that the CLF test was significant at p = 0.05. To further examine where the potential bias is originating from, I compared the standardized regression weights of the original model to those of the CLF model. Two items (EFF4 and EFF1) in Financial Self-Efficacy, two items (SUB3 and SUB4) in Subjective Value Attached to Financial Matters, and one item (WB3) in Expected Future Financial Security showed a difference higher than .2, thus suggesting they might be affected by common method bias. CLF results suggest that one should retain the common factor when running the structural model to control for common method bias (Collier 2020). Based on results from these three tests, I conclude that CMV should not be a concern in the interpretation of results.

Hypotheses Testing

To test the hypotheses, I ran the structural model in AMOS (see Figure 2). Model fit statistics were satisfactory per the thresholds discuss earlier in CFA section (χ^2 = 405.586, df = 202, p < .001, χ^2/df = 2.008, CFI = .904, IFI = .906, RMSEA = .081). Results show that gender role ideology had positive and significant relationship with willingness to acquire financial knowledge (β = .546, t = 5.417, p = <.001), contrary to my prediction, thus I do not find support for H1. Gender role ideology had a negative and significant relationship to financial literacy (β = -.395, t = -3.486, p = <.001), thus providing support for H2. Similarly, in support of H3, willingness to acquire financial knowledge had a positive and significant relationship with expected future financial security (β = .411, t = 4.412, p = <.001). On the other hand, results indicate that financial literacy is not significantly related to expected future financial security (β = -.01, t = -.137, p = .891). Table 8 summarizes the results from direct relationships hypotheses along with structural model fit statistics and R^2 values.

Figure 2. Structural Model

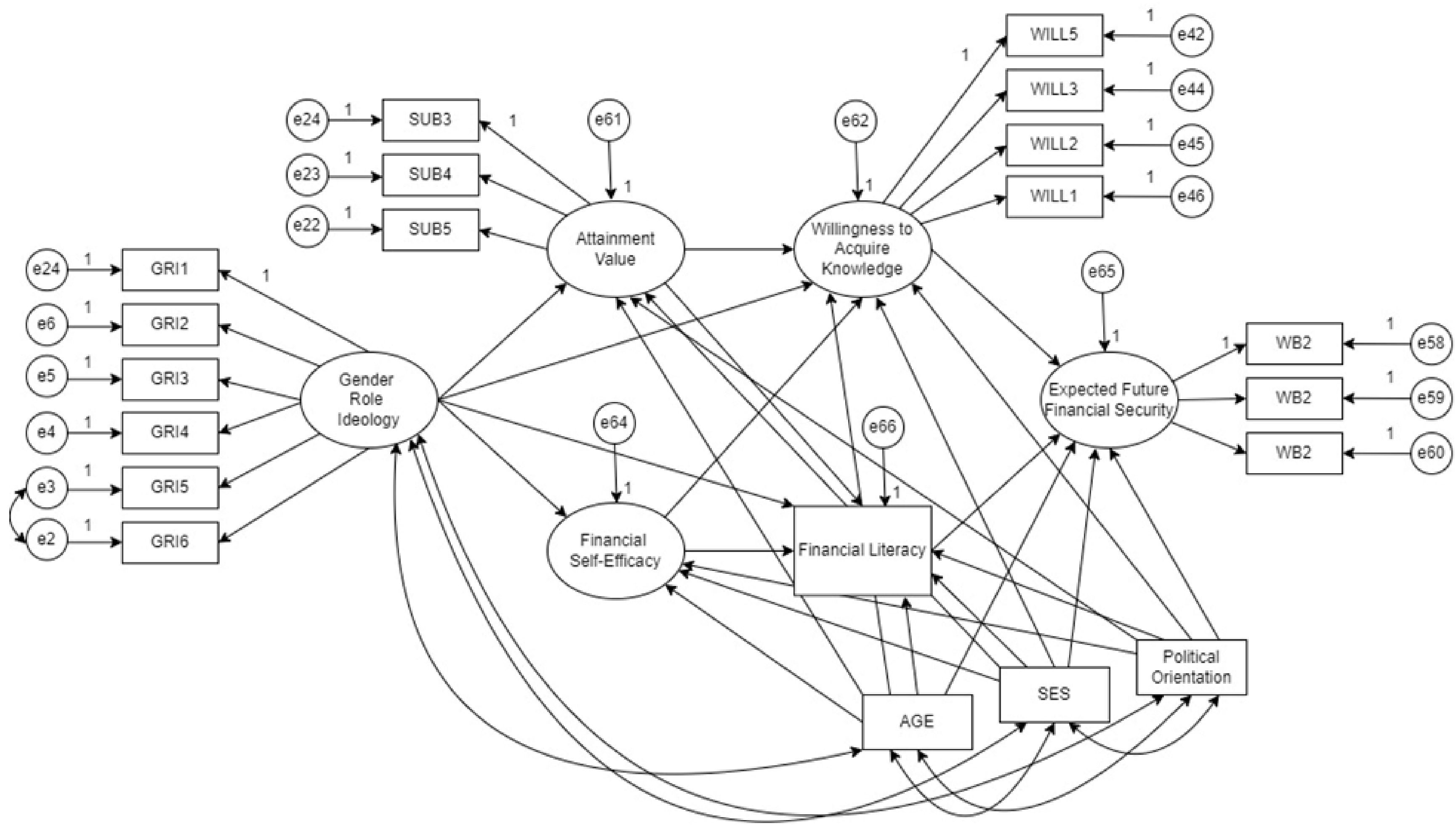


Table 8. Structural Model Results

Hypothesized Relationships	***Standardized Estimates***	***t-value***	***p-value***	***Conclusion***
H1: Gender-Role Ideology → Willingness to Acquire Financial Knowledge	.564	5.417	<.001***	Not Supported
H2: Gender-Role Ideology → Financial Literacy	-.395	-3.486	<.001***	Supported
H3: Willingness to Acquire Financial Knowledge → Expected Future Financial Security	.411	4.412	<.001***	Supported
H4: Financial Literacy → Expected Future Financial Security	-.01	-.137	.891	Not Supported
Squared Multiple Correlation (R^2):				
Willingness to Acquire Financial Knowledge	.531			
Financial Literacy	.109			
Expected Future Financial Security	.29			
Model Fit Statistics:				
χ^2 = 405.586, df = 202, p < .001, χ^2/df = 2.008, CFI = .904, IFI = .906, RMSEA = .081				

Significance at * p < 0.050; ** p < 0.010; *** p < 0.001

Mediation Analysis. This study assessed the mediating role of financial self-efficacy and subjective value attached to financial matters on the relationships between gender role ideology and (a) willingness to acquire financial knowledge, and (b) financial literacy. I tested these parallel mediators using the estimands syntax function in AMOS as described in Collier (2020). Additionally, I specified a bootstrap analysis at 5000 samples and bias-corrected confidence intervals at 95%. The results revealed insignificant indirect effects of gender role ideology on willingness to acquire financial knowledge (H5a) and on financial literacy (H5b) through financial self-efficacy (β = .034, t = .918, p = .198, CI -.028, .119; β = .017, t = .739, p = .302, CI -.016, .081), thus I did not find support for H5a-b. Similarly, I find insignificant indirect effects of gender role ideology on willingness to acquire financial knowledge (H6a) and on financial literacy (H6b) through subjective value attached to financial matters (β = .026, t = .866, p = .17, CI -.016, .107; β = -.004, t = -.4, p = .373, CI -.035, .008), thus I did not find support for H6a-b either. Mediation analysis summary is presented in Table 9.

Table 9. Mediation Analysis Summary

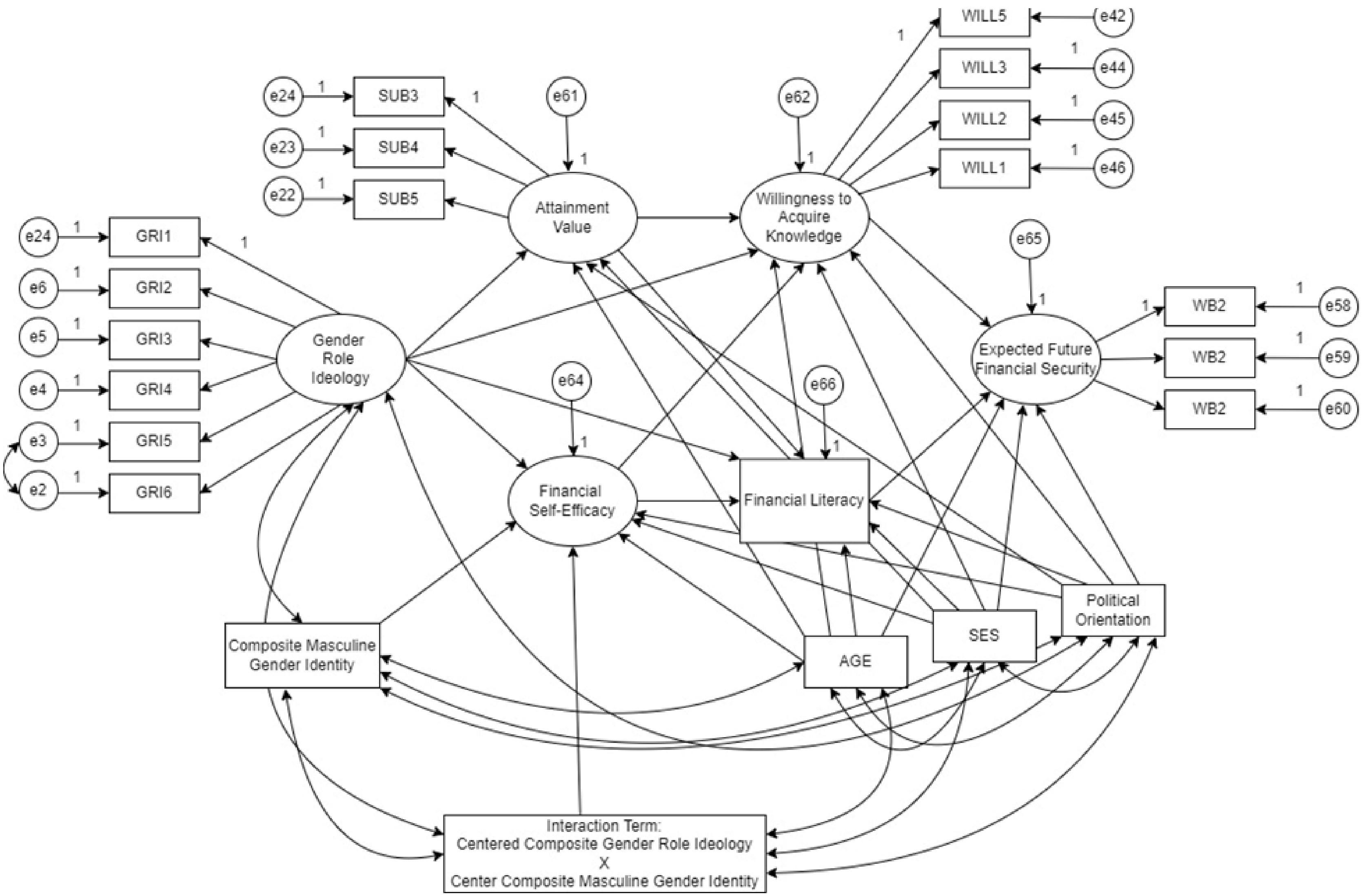
Hypothesized Relationships	*Unstandardized Direct Effect (t-value)*	*Unstandardized Indirect Effect (t-value)*	*Confidence Intervals*		*p-value*	*Conclusion*
			Lower Bound	***Upper Bound***		
H5a: GRI → EFF → WILL	.537 (5.417)	.034 (.918)	-.028	.119	.198	Not supported
H5b: GRI → EFF → FLIT	-.168 (-3.486)	.017 (.739)	-.016	.081	.302	Not supported
H6a: GRI → SUB → WILL	.537 (5.417)	.026 (.866)	-.016	.107	.17	Not supported
H6a: GRI → SUB → FLIT	-.168 (-3.486)	-.004 (-.4)	-.035	.008	.373	Not supported

Note. GRI = gender role ideology; EFF = financial self-efficacy; WILL = willingness to acquire financial knowledge; FLIT = financial literacy; SUB = subjective value attached to financial matters

Significance at * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

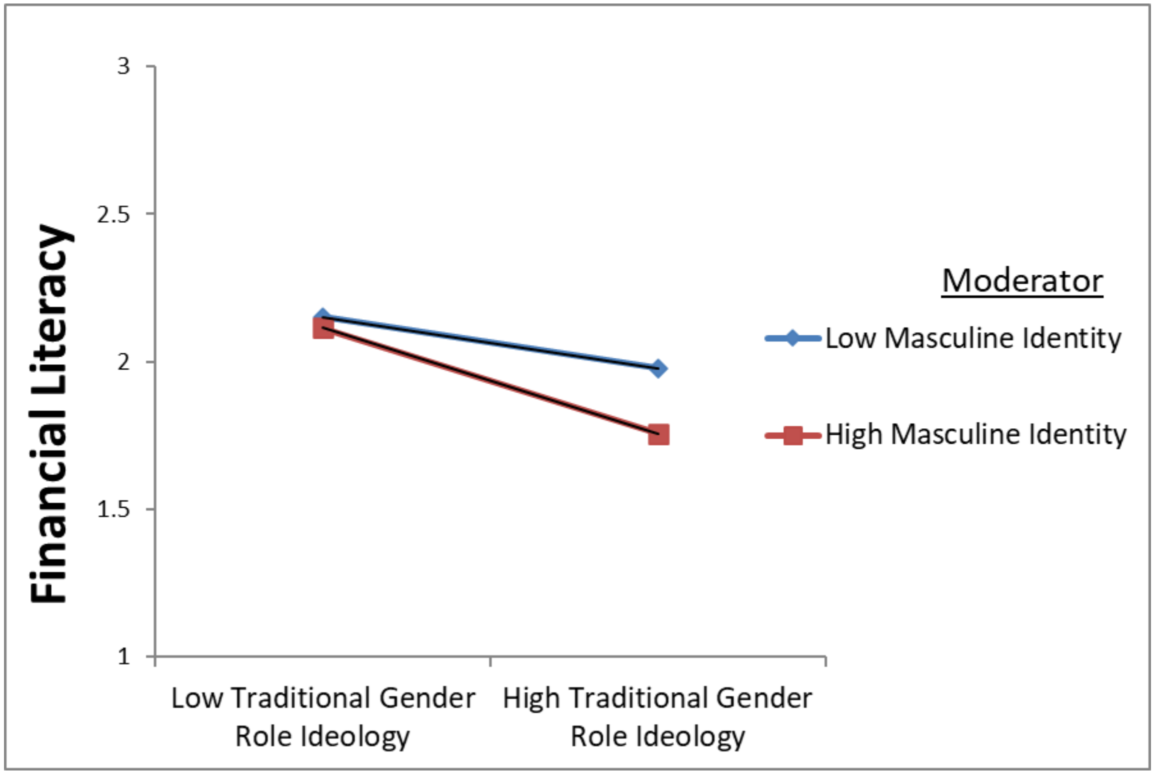
Moderation Analysis. To test the moderating hypotheses, I created interaction terms in SPSS by multiplying the independent variable by each of the moderators following Collier (2020). Before creating the interaction term, I mean centered the composites of the independent variable and each moderator in SPSS. Collier (2020) states that high collinearity can be an issue with interaction terms causing problems with analyses later (Frazier, Tix, and Barron 2004) and recommends mean centering as potential solution. Despite research claiming that mean centering may not be entirely necessary (e.g., Echambadi and Hess 2007, Hayes 2018), Collier (2020) suggests that mean centering also allows for easier interpretation (Dawson 2014) and thus encourages the practice before creating the interaction term. Additionally, I probed significant interactions at low and high levels by adding and subtracting one standard deviation to the mean-centered moderator and creating a new interaction term with each level (Collier 2020). See figure 3 for an example of the model with interaction terms.

Figure 3. Sample Structural Model with Interaction Terms



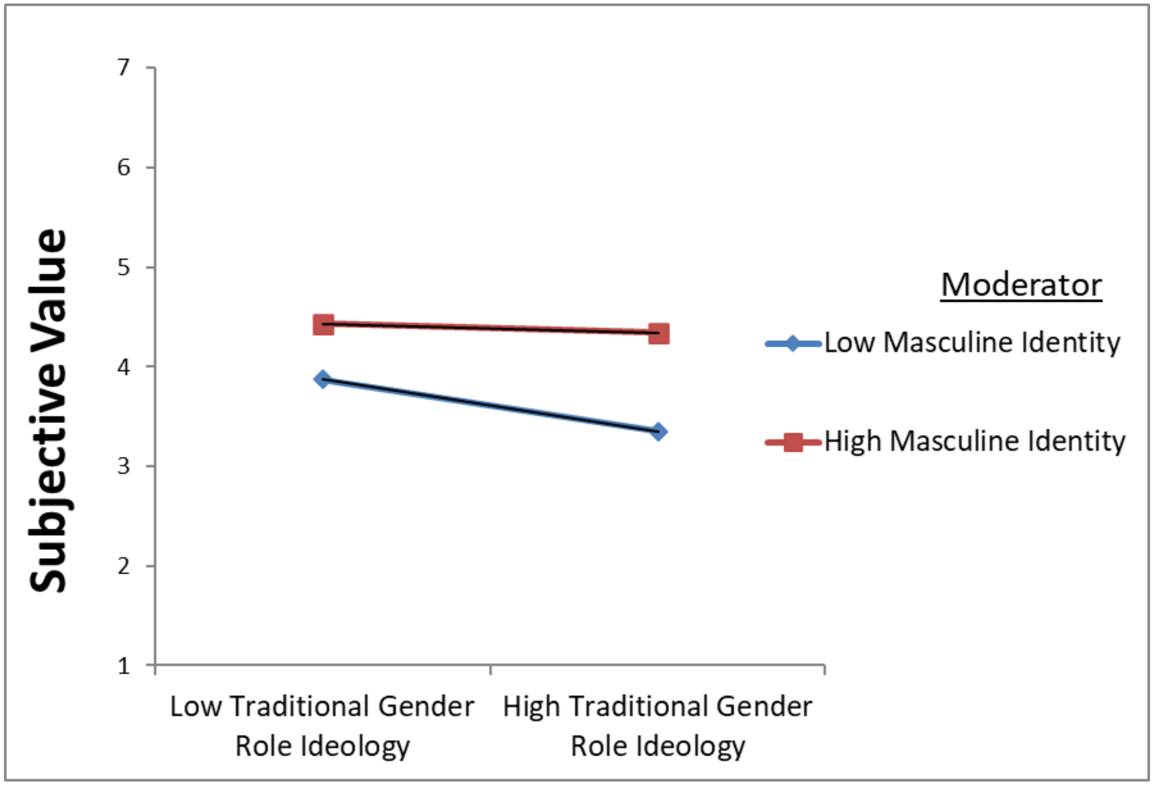
This study assessed the moderating roles of masculine gender identity, peers' influence regarding financial matters, and parents' influence regarding financial matters on the relationships between gender role ideology and (a) willingness to acquire financial knowledge, (b) financial literacy, (c) subjective value attached to financial matters, and (d) financial self-efficacy. The results revealed that masculine gender identity did not have a significant impact on the relationship between gender role ideology and willingness to acquire financial knowledge ($\beta = .004$, $t = .092$, $p = .927$), thus H7a was not supported. On the other hand, in support for H8a, results revealed that masculine gender identity had a negative and significant moderating impact on the relationship between gender role ideology and financial literacy ($\beta = -.046$, $t = -2.029$, $p = .042$), such that the higher the masculine gender identity reported, the more negative the relationship between gender role ideology and financial literacy became (see figure 4).

Figure 4. Interaction Between Gender Role Ideology and Masculine Gender Identity on Financial Literacy



I probed this interaction to further examine the moderating role of masculine gender identity and results reveal that, indeed, the relationship between gender role ideology and financial literacy is weaker at low levels of the moderator ($\beta = -.166$, $t = -1.867$, $p = .062$) and stronger at higher levels of the moderator ($\beta = -.154$, $t = -2.773$, $p = .006$). Similarly, masculine gender identity had a significant moderating effect on the relationship between gender role ideology and subjective value attached to financial matters ($\beta = .108$, $t = 2.853$, $p = .004$). However, contrary to my predictions, this effect dampened the relationship instead of strengthening it (see figure 5).

Figure 5. Interaction Between Gender Role Ideology and Masculine Gender Identity on Subjective Value



Thus, H7c was not supported. To further understand this moderation, I also probed it at low and high levels of the moderator, results show that the relationship between gender role ideology and subjective value attached to financial matters is stronger at lower levels of masculine gender identity (β = -.201, t = -2.008, p = .045) and weakest at higher levels of the moderator (β = -.104, t = -1.205, p = .228). Moreover, results revealed that masculine gender identity did not have a significant impact on the relationship between gender role ideology and financial self-efficacy, thus H7d was not supported.

Similarly, results show that peers' influence regarding financial matters did not have a significant impact on the relationships between gender role ideology and (a) willingness to acquire financial knowledge (β = -.106, t = -.434, p = .664), (b) financial literacy (β = .028, t = 1.163, p = .245), (c) subjective value attached to financial matters (β = .108, t = 2.853, p = .004), and (d) financial self-efficacy (β = .071, t = 1.748, p = .08). Thus, I did not find support for H8a-b.

Parents' influence regarding financial matters did not have a significant impact on the relationships between gender role ideology and (a) willingness to acquire financial knowledge (β = .056, t = 1.317, p = .188), (b) financial literacy (β = .004, t = .147, p = .883), (c) subjective value attached to financial matters (β = .067, t = 1.591, p = .112), and (d) financial self-efficacy (β = -.012, t = -.294, p = .769) either. Thus, I did not find support for H9a-b. See Table 10 for moderation analysis summary.

Table 10. Moderation Analysis Summary

Hypothesized Relationships	*Unstandardized Estimates*	*t-value*	*p-value*	*Conclusion*
Masculine Identity → Willingness to Acquire Financial Knowledge	.088	1.026	.305	Not supported
H7a: GRI*MascID→WILL	.004	.092	.927	
Masculine Identity → Financial Literacy	-.065	-1.39	.165	Supported
H7b: GRI*MascID→FLITC	-.046	-2.029	.042*	
Probing the Interaction				
Low level (one standard deviation below the mean):				
Gender Role Ideology → Financial Literacy	-.166	-1.867	.062	
Mean level:				
Gender Role Ideology → Financial Literacy	-.133	-2.3	.021*	
High level (one standard deviation above the mean):				
Gender Role Ideology → Financial Literacy	-.154	-2.773	.006**	
Masculine Identity → Subjective Value Attached to Financial Matters	.387	4.748	<.001***	Not supported
H7c: GRI*MascID→SUB	.108	2.853	.004**	
Probing the Interaction				
Low level (one standard deviation below the mean):				
Gender Role Ideology → Subjective Value Attached to Financial Matters	-.201	-2.008	.045*	
Mean level:				
Gender Role Ideology → Subjective Value Attached to Financial Matters	-.155	-1.695	.09	
High level (one standard deviation above the mean):				
Gender Role Ideology → Subjective Value Attached to Financial Matters	-.104	-1.205	.228	
Masculine Identity → Perceived Financial Self-Efficacy	.278	3.566	<.001***	Not supported
H7d: GRI*MascID→EFF	-.011	-.299	.765	
Peers' Influence → Willingness to Acquire Financial Knowledge	.326	4.482	< .001***	Not supported
H8a: GRI*PEER→WILL	-.016	-.434	.664	
Peers' Influence → Financial Literacy	.078	1.721	.085	Not supported
H8b: GRI*PEER→FLITC	.028	1.163	.245	
Peers' Influence → Subjective Value Attached to Financial Matters	.183	2.35	.019*	Not supported
H8c: GRI*PEER→SUB	.051	1.26	.208	
Peers' Influence → Perceived Financial Self-Efficacy	.304	3.826	< .001***	Not supported
H8d: GRI*PEER→EFF	.071	1.748	.08	

Table 10. Continued

Parents' Influence → Willingness to Acquire Financial Knowledge	.162	2.407	.016*	Not
H9a: GRI*PRNT→WILL	.056	1.317	.188	supported
Parents' Influence → Financial Literacy	-.008	-.199	.842	Not
H9b: GRI*PPRNT→FLITC	.004	.147	.883	supported
Parents' Influence → Subjective Value Attached to Financial Matters	.125	1.88	.06	Not
H9c: GRI*PRNT→SUB	.067	1.591	.112	supported
Parents' Influence → Perceived Financial Self-Efficacy	.125	1.874	.061	Not
H9d: GRI*PPRNT→EFF	-.012	-.294	.769	Supported

Significance at * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

Study 2

Study 1 examined gender role ideology in a correlational manner, thus, Study 2 aims to examine causality in the hypothesized relationships between gender role ideology and (a) financial literacy, (b) willingness to acquire financial knowledge, (c) subjective value attached to financial matters, and (d) financial self-efficacy through an experimental design by priming traditional vs. egalitarian gender role ideology to assess causality on downstream variables. Based on the theoretical framework presented in Chapter II, I expect that participants in the egalitarian condition will report higher 1) willingness to acquire financial knowledge, 2) financial literacy scores, 3) financial self-efficacy, and 4) subjective value attached to financial matters compared to the traditional condition. Additionally, I vary the degree to which stereotypical traditional/egalitarian gender roles are explicitly vs. implicitly presented resulting in four possible combinations (i.e., traditional-implicit [*TI*], egalitarian-implicit [*EI*], traditional-explicit [*TE*], and egalitarian-explicit [*EE*]). Given that exposure to implicit/explicit stereotypes was not theoretically addressed in the literature review section, nor was it a part of the conceptual framework, I treat this as a variable of interest that might generate interesting insights rather than a central construct for hypotheses testing in Study 2.

Procedure

Study 2 employs an online scenario-based one factor between-subjects experimental design (gender role ideology: traditional vs. egalitarian). Although the study employs four scenarios, given that the varying degrees of implicit vs. explicit stereotypes discussed above is not of theoretical interest to this study nor does it employ a manipulation check, I only consider the priming of gender role ideology as the theoretically driven factor of interest. The study was distributed among undergraduate and graduate business students as part of a departmental subject participation pool in exchange for course credit. Participants were randomly assigned to one of four scenarios (e.g., traditional-implicit [*TI*], egalitarian-implicit [*EI*], traditional-explicit [*TE*], and egalitarian-explicit [*EE*]) followed by a writing exercise to strengthen the prime. Subsequently, the participants responded to the manipulation check question as well as questions measuring variables of the study.

Sample Characteristics

A total of 293 students participated in the study. Fourteen of those responses were incomplete with more than 70% of data missing and were removed from further analysis leaving only 279 responses. Upon further inspection, 50 of the remaining responses did not complete the priming writing task appropriately (e.g., wrote "nice", "I don't know", "don't know what egalitarian means", etc.) and thus were also removed from further analyses leaving only 229 usable responses. Out of those 229 responses, 83 identified as men, 137 as women, and 9 as either non-binary or other. Following Study 1, the 137 women comprised the sample for data analysis. A little over a half (56.2%) of this sample were between the ages of 18 and 21, one third (30.7%) were between the ages of 22 and 27, and the remaining 13.2% were between the ages of 33 and 65 and above. Most of the sample (78.8%) described themselves as Hispanic or Latino, followed by a 13.9% that described themselves as having mixed ethnicities, 7% described themselves as white, and 2.2% as Asian or Asian American. The traditional condition had n = 75 participants, while the egalitarian condition had n = 62 participants.

Measures

To prime traditional/egalitarian gender role ideology, I presented participants with a scenario that described a society in which gender roles were either traditional or egalitarian. Participants were asked to read this scenario and to complete a follow-up writing task to increase the strength of the prime. This task asked participants to "please think of a situation where you acted in accordance with traditional/egalitarian societal gender roles as described in the text above. With this situation in mind, take a moment to write a few sentences describing the situation and why you think it is an example of traditional/egalitarian societal gender roles".

I used a 7-point Likert scale item (i.e., "Please think of the paragraph that you read in the previous question. Using the scale below, please indicate how traditional or egalitarian you would rate the gender roles described in the excerpt" [1 = very traditional, 7 = very egalitarian]) as a manipulation check for the traditional/egalitarian priming. I used the same items that were used in Study 1 to measure 1) willingness to acquire financial knowledge, 2) financial literacy, 3) financial self-efficacy, and 4) subjective value attached to financial matters.

Analysis and Results

To test my predictions, I collapsed the egalitarian-implicit and the egalitarian-explicit conditions into a single condition called "egalitarian". Similarly, I collapsed the traditional-implicit and the traditional-explicit conditions into a single condition called "traditional". A one-way analysis of variance (ANOVA) revealed that participants rated in the egalitarian conditions rated the scenario as more egalitarian (M = 5.322, SD = 1.576) than participants in the traditional condition (M = 3.013, SD = 1.927, $p < .001$). I then conducted independent samples t-tests to examine mean differences (see Table 11). First, I find that participants in the egalitarian condition reported similar willingness to acquire financial knowledge (M = 6.149, SD = 1.035) to the traditional condition (M = 5.853, SD = 1.22, $t(135) = -1.508$, p = .131). Thus, I do not find support for my prediction. Similarly, I do not find support for my prediction regarding financial literacy either. Participants in the egalitarian condition had similar financial literacy scores (M = 1.854, SD = .938) to the traditional condition (M = 1.920, SD = .969, $t(135) = .397$, p = .692). Nor do I find support for my prediction regarding subjective value attached to financial matters.

Participants in the egalitarian condition reported similar subjective value attached to financial matters (*M* = 6.559, *SD* = .646) to the traditional condition (*M* = 6.555, *SD* = .674, $t(135) = -.032$, $p = .975$.). Lastly, I do not find support for my prediction regarding financial self-efficacy either. Participants in the egalitarian condition reported lower financial self-efficacy (*M* = 4.521, *SD* = 1.405) than the traditional condition (*M* = 5.142, *SD* = 1.542). Although this difference is statistically significant, $t(135) = 2.440$, $p = .016$, the results are in the opposite direction (i.e., I expected the egalitarian condition, not the traditional one, to have the higher mean).

Table 11. Mean Differences Between Traditional and Egalitarian Conditions

	Egalitarian (n = 62)		**Traditional (n = 75)**	
Measure	***M***	***SD***	***M***	***SD***
Willingness to Acquire Financial Knowledge	6.149	1.035	5.853	1.220
Financial Literacy	1.854	.938	1.920	.969
Attainment Value Attached to Financial Matters	6.559	.646	6.555	.647
Financial Self-Efficacy	4.521*	1.405	5.142*	1.542

Significance at * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

As a secondary variable of interest, I examined if whether presenting the primes in an implicit or explicit manner influenced willingness to acquire financial knowledge, financial literacy, financial self-efficacy, and subjective value attached to financial matters. To this end, I collapsed the egalitarian-implicit and the traditional-implicit conditions into a single condition called “implicit”. Similarly, I collapsed the egalitarian-explicit and the traditional-explicit conditions into a single condition called “explicit”. I then conducted a series of t-tests to this end. Results indicate that varying the implicitness or explicitness with which the primes were presented did not influence any of the dependent variables (see Table 12). First, I find that participants in the implicit condition ($n = 73$) reported similar willingness to acquire financial knowledge ($M = 6.034$, $SD = 1.050$) to the explicit condition ($M = 5.933$, $SD = 1.257$, $t(135) = .510$, $p = .611$). Second, I find that participants in the implicit condition had similar financial literacy scores ($M = 1.931$, $SD = .917$) to the explicit condition ($M = 1.843$, $SD = .995$, $t(35) = .537$, $p = .592$). Third, I find that participants in the implicit condition reported similar subjective value attached to financial matters ($M = 6.538$, $SD = .742$) to the explicit condition ($M = 6.578$, $SD = .554$, $t(135) = -.347$, $p = .729$). Lastly, I find that participants in the implicit condition reported similar financial self-efficacy ($M = 4.881$, $SD = 1.629$) to the traditional condition ($M = 4.838$, $SD = 1.377$, $t(135) = .165$, $p = .869$).

Table 12. Mean Differences Between Implicit and Explicit Conditions

	Egalitarian (n = 73)		**Traditional (n = 64)**	
Measure	***M***	***SD***	***M***	***SD***
Willingness to Acquire Financial Knowledge	6.034	1.050	5.933	1.257
Financial Literacy	1.931	.917	1.843	.995
Attainment Value Attached to Financial Matters	6.538	.742	6.578	.729
Financial Self-Efficacy	4.881	1.629	4.838	.869

Significance at * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

Finally, a two-way ANOVA was run to examine if gender role ideology interacted with presentation format in influencing willingness to acquire financial knowledge, financial literacy, financial self-efficacy, and subjective value attached to financial matters. For this analysis, I compared all four scenarios (i.e., traditional-implicit [*TI*], egalitarian-implicit [*EI*], traditional-explicit [*TE*], and egalitarian-explicit [*EE*]) to each other (see Table 13). Results show that the interaction between gender role ideology and presentation format was not significant for willingness to learn ($F(1, 137) = .007$, $p = .934$), financial self-efficacy ($F(1, 137) = 2.608$, $p = .109$), subjective value attached to financial matters ($F(1, 137) = 1.023$, $p = .314$), or financial literacy ($F(1, 137) = .060$, $p = .807$).

Table 13. Mean Differences Between Four Conditions

Measure	Traditional Implicit (n = 41)		Traditional Explicit (n = 34)		Egalitarian Implicit (n = 30)		Egalitarian Explicit (n = 32)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Willingness to Acquire Financial Knowledge	6.034	1.050	5.933	1.257	6.210	.877	6.083	1.193
Financial Literacy	1.931	.917	1.843	.995	1.875	.941	1.833	.911
Attainment Value Attached to Financial Matters	6.538	.742	6.578	.729	6.479	.742	6.644	.542
Financial Self-Efficacy	4.881	1.629	4.838	.869	4.750	1.401	4.277	1.392

Significance at * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

Specifically, participants in the traditional implicit condition reported similar financial self-efficacy scores ($M = 4.983$, $SD = 1.798$) to the participants in the traditional explicit condition ($M = 5.333$, $SD = 1.160$, $t(73) = -.977$, $p = .332$). Similarly, participants in the traditional implicit condition reported similar willingness to acquire financial knowledge scores ($M = 5.896$, $SD = 1.159$) to the participants in the traditional explicit condition ($M = 5.801$, $SD = 1.315$, $t(73) = .332$, $p = .741$). Moreover, participants in the traditional implicit condition reported similar subjective value attached to financial matters scores ($M = 6.585$, $SD = .748$) to the participants in the traditional explicit condition ($M = 6.519$, $SD = .581$, $t(73) = .418$, $p = .677$). Finally, participants in the traditional implicit condition reported similar financial literacy scores ($M = 1.975$, $SD = .907$) to the participants in the traditional explicit condition ($M = 1.852$, $SD = 1.048$, $t(73) = .543$, $p = .589$).

Similarly, the results showed no significant differences between the egalitarian implicit (n = 32) vs. egalitarian explicit conditions (n = 30). Specifically, participants in the egalitarian implicit condition reported similar financial self-efficacy scores ($M = 4.750$, $SD = 1.401$) to the participants in the egalitarian explicit condition ($M = 4.277$, $SD = 1.392$, $t(60) = 1.330$, $p = .189$). Participants in the egalitarian implicit condition also reported similar willingness to acquire financial knowledge scores ($M = 6.210$, $SD = .877$) to the participants in the egalitarian explicit condition ($M = 6.083$, $SD = 1.193$, $t(60) = .482$, $p = .632$). Moreover, participants in the egalitarian implicit condition reported similar subjective value attached to financial matters scores ($M = 6.479$, $SD = .742$) to the participants in the egalitarian explicit condition ($M = 6.644$, $SD = .524$, $t(60) = -1.006$, $p = .319$). Finally, participants in the egalitarian implicit condition reported similar financial literacy scores ($M = 1.875$, $SD = .941$) to the participants in the egalitarian explicit condition ($M = 1.833$, $SD = .911$, $t(60) = .173$, $p = .863$).

This chapter discussed the methodology that I employed to test the hypotheses and answer my research question. In the following chapter, Chapter IV: Discussion and Conclusion, I present a discussion of my findings, theoretical contributions, and practical implications. Additionally, I discuss research limitations and outline potential avenues for future research. I conclude by providing a summary of the research objectives and research questions including how and whether they were met, followed by the main take-aways from this research.

CHAPTER IV

DISCUSSION

The objective of this research was to shed light on the potential factors that might be contributing to women's low financial literacy levels compared to men, and how these factors influenced women's perceived financial well-being. Drawing from gender roles literature and Expectancy-Value Theory, I proposed a conceptual model that hypothesized gender role ideology as an antecedent to financial literacy and willingness to acquire financial knowledge. Specifically, the model proposed that higher degrees of traditional gender roles beliefs in women would be related to lower levels of financial literacy and willingness to acquire financial knowledge. These latter variables, in turn, were hypothesized to predict expected future financial security, a dimension of perceived financial well-being. Previous literature studying women's financial literacy levels had not yet examined the role, if any, that gender role ideology might play.

Results from the survey-based Study 1 reveal that, contrary to my predictions, gender role ideology had a positive and significant relationship with willingness to acquire financial knowledge. In a follow-up experimental-based Study 2, I do not find support for this prediction either as reported willingness to acquire financial knowledge was not significantly different among egalitarian and traditional conditions. This result could be due to methodological limitations which will be discussed in the limitations section. Another explanation could be that the relevance of financial knowledge and well-being have recently garnered more attention and are regarded as necessary life skills regardless of one's attitudes towards gender roles (Bosse 2022). But why is it that the higher the traditional gender role ideology, the stronger the willingness to acquire financial knowledge? This could be due to a compensatory process. If one holds a traditional gender role ideology and thus has not considered the acquisition of financial knowledge as relevant to one's gender role schema, one might feel strongly that one should acquire this skill if it becomes a normalized and relevant skill to function in society regardless of gender.

On the other hand, results form Study 1 support the hypothesis regarding the negative relationship between gender role ideology and financial literacy. Interestingly, this result is not replicated in Study 2. This inconsistency in findings between studies could be due to financial literacy being an objective measure which may not respond to immediate manipulation, compared to the rest of the variables which are attitudinal and might be more responsive to experimental treatment. Results from Study 1 are in line with EVT predictions, and this provides further confirmation for this aspect of the theory in a different context than academic performance.

Results also show that willingness to acquire financial knowledge (but not financial literacy) has a positive relationship with expected future financial security. Following the line of thought from the above explanation, the insignificant relationship between financial literacy and expected future financial security could result from the type of variables we are examining. Expected future financial security is an evaluative variable (one evaluates how their financial situation will be in the future), this evaluation may not be dependent on how much one knows about personal finance (i.e., financial literacy), rather it may depend on one's own evaluation of how much one thinks one knows. For example, depending on my estimations and predictions of financial needs and responsibilities in the future, I might determine that my current knowledge (even if it is higher than average) might not be enough to meet them. I might conclude I need to learn more. On the other hand, having the intention to acquire more knowledge and learning more about finances might positively skew my perceptions of my *future* financial abilities, thus helping me imagine a more optimistic financial future.

In line with EVT, our research also examined the mediation roles of financial self-efficacy and subjective value attached to financial matters. Study 2 examined these variables as dependent variables rather than mediators. Like Study 1, Study 2 does not find a significant effect of gender role ideology on subjective value attached to financial matters. However, that is not the case for financial self-efficacy. Contrary to my predictions, results from Study 2 show that traditional gender role ideology resulted in significantly higher levels of financial self-efficacy compared to the egalitarian condition. This is unexpected as I had hypothesized that this would be the condition that would yield the lowest financial self-efficacy. One possible explanation for this unexpected result could be that participants in the traditional gender role ideology condition experienced stereotype reactance (Kray, Thompson, and Galinsky 2001). Stereotype reactance is a phenomenon that occurs when consumers are presented with an explicit negative stereotype about themselves which they react against by overcompensating in the area in which they are being negatively stereotyped. For example, research in negotiation skills has found that when women negotiators are made explicitly aware of negative stereotypes regarding women's negotiation skills, they tend to perform better in a follow-up negotiation task compared to women who were made implicitly aware of the same stereotype (Kray, Thompson, and Galinsky 2001). In other words, they reacted against the stereotype by performing even better than how they normally would. Following this logic, by exposing female participants to statements like “men are better than women at finances” could have resulted in stereotype reactance which would then have caused participants to over-compensate in their financial self-efficacy reporting.

Finally, this research examined three boundary conditions: a) masculine gender identity, b) peers’ influence regarding financial matters, and c) parents’ influence regarding financial matters. I did not find significant interaction effects for parents’ influence regarding financial matters nor for peers’ influence regarding financial matters. This could be due to participants’ parents and peers having similar ideologies to themselves. For example, it could be argued that gender role ideology is instilled by the socializing actors in individuals’ lives. Thus, if parents held traditional gender role attitudes, it would be likely that they would raise their children according to these beliefs which they would be likely to hold as well. This could also be extended to peers since individuals are likely to form social connections to those that hold similar values to their own. Without much variation in either parents’ or peers’ beliefs, we may not observe any conditional influence from their part on dependent variables.

On the other hand, masculine gender identity showed significant interaction effects on the relationships between gender role ideology and 1) financial literacy, and 2) subjective value attached to financial matters. While the interaction effect was as expected on financial literacy, it was in the opposite direction for subjective value attached to financial matters. My prediction stated that masculine gender identity would strengthen the negative relationship between gender role ideology and subjective value attached to financial matters, instead, results show that masculine gender identity dampens this relationship. This, again, could be due to the increased relevance of financial knowledge as necessary life skills regardless of one’s attitudes towards gender roles. Given that masculine gender identity captures agentic traits, it could be argued that someone who thinks of themselves as assertive or as possessing leadership abilities might place more value on domains that tend to be associated with these characteristics as well (e.g., finance) regardless of gender role schema.

Theoretical Contributions

This work contributes to consumer research by shedding light on the roles that gender role ideology and masculine gender identity can play in influencing women's financial literacy scores, their willingness to acquire financial knowledge, and how these latter variables influence perceived expected future financial security, a dimension of perceived financial well-being. Previous literature in this area has examined factors such as numeracy skills (Niederle and Vesterlund 2010), self-confidence (Bucher-Koenen et al. 2017), and household division of labor (Ward and Lynch 2019) to understand the gender gap in financial literacy between men and women. I add to this literature by presenting evidence that holding traditional views of societal gender roles is related to low financial literacy scores among women and therefore, could be undermining efforts to bridge the gender gap in financial literacy. This finding aligns with Driva, Lührmann, and Winter (2016) work which examines the detrimental impact of gender-stereotypical beliefs on women's financial literacy scores. I also advance theory in this area by examining masculine gender identity as an individual difference variable that moderates the relationship between gender-role ideology and financial literacy. Previous work has only compared financial literacy scores between men and women. This research adopted the view that different levels of masculine and feminine traits can coexist in a person (Gill et al. 1987). The finding that the influence of gender role ideology on financial literacy and attainment value attached to financial matters varied as a function of the level of masculine identity traits contributes to a nuanced understanding of the development of financial literacy among women.

This work also contributes to the understanding of perceived financial well-being by identifying willingness to acquire financial knowledge as a significant predictor of expected future financial security, one of the dimensions of perceived financial well-being. Previous research had identified willingness to take investment risks as a predictor of expected future financial security (Netemeyer et al. 2018). My research aligns with this previously established relationship and shows that, at least among women, just wanting to learn more about finances has a positive influence in perceived future financial situation despite intentions to take financial risks.

Practical Implications

Insights from this research provide practitioners with significant psychographic segmentation characteristics that may be relevant for targeting efforts. Practitioners interested in understanding and improving low financial literacy levels among women might benefit from these findings by considering the cultural context in which some women live. Some cultures tend to adhere to more traditional gender roles than other cultures, more efforts could be directed to such cultural clusters.

At the societal level, given that my findings indicate that having traditional attitudes towards gender roles tends to be linked to lower levels of financial literacy among women it could be deduced that promoting systems that support egalitarian attitudes towards gender roles (i.e., homemaker and breadwinner roles can be carried out by either parent regardless of gender) would aid in women's financial literacy acquisition. For example, organizations could promote egalitarian gender roles by supporting working mothers and fathers equally (e.g., parental leaves and compensations), or by inviting employees' spouses to financial literacy seminars to promote an equal acquisition of knowledge between the partners regardless of each other's chosen role, or by providing financial literacy courses for women. Even at younger ages, institutions could promote the importance that financial literacy has for young girls so that if they choose to adhere to traditional gender roles, they do not experience the financial literacy gender gap.

Moreover, as shown in Study 1, more traditional gender role attitudes was linked to higher willingness to acquire knowledge. This means that even though holding more traditional gender role beliefs is linked to lower levels of financial literacy, it is also related to higher desire to learn. This provides public and private actors interested in improving financial literacy among women with insights regarding which factors might influence how receptive consumers might be of their efforts and could point to other barriers to knowledge that they may be experiencing if willingness is present.

Practitioners interested in improving perceived financial well-being, could also benefit from promoting consumers' willingness to acquire financial knowledge as this was linked to higher expected future financial security. Organizations could implement campaigns promoting sources where women might find useful financial information to increase their awareness and nudge their willingness to learn, thus potentially increasing their optimism regarding their future financial situation.

Limitations and Future Research

This section discusses the main research limitations of this dissertation, as well as recommendations of how and under which conditions these findings should be considered by the reader. First, I discuss limitations regarding sample size and profile. For the first study, sample size fell short of the recommended threshold of 200 participants to conduct SEM using AMOS. While the model presented satisfactory model fit and I was able to test all hypotheses, the number of estimated parameters relative to our sample size could have affected the power of the analyses which could partly explain insignificant relationships. This applies to Study 2 as well, although I met the minimum sample size per condition for a two-factorial experimental design, increasing the sample size could have increased the power of the analysis. Similarly, the sample profile consisted of only women in the U.S. which limits the cultural context of the findings. Given that gender role ideology is largely dependent on cultural upbringing, examining a more culturally diverse sample could have provided a more holistic picture of the phenomenon.

Second, although the research has incorporated mainly previously tested and validated scales and measurement items, there exist shortcomings that should be discussed. For example, Lusardi and Mitchell's (2014) financial literacy scale has received some criticisms. Scholars have argued that this scale may not be effectively capturing financial literacy and that it produces inconsistent results (Knoll and Houts 2012; Schmeiser and Seligman 2013). This criticism also stems from a fragmented understanding of 'financial literacy' (Robb 2012). Future research could adopt a more sophisticated measure of financial literacy to provide a better understanding of the phenomenon. Similarly, the items used to measure political orientation did not reach the recommended reliability threshold of $\alpha = .7$ which could have compromised the quality of this control variable in the model.

Third, although this research does employ two different research designs (survey-based and experimental-based) it only measures variables at a single point in time. Given that the phenomenon of interest is financial literacy acquisition, it would be appropriate to think of it as a process that happens over time. As such, adopting longitudinal experimental studies where the researcher measures gender role attitudes and exposes participants to financial information over time, then measures the acquired knowledge over several points in time and compares it across participants reporting egalitarian/traditional gender role ideology could provide a clearer picture of the role (if any) that gender role ideology might play in financial literacy levels among women.

Fourth, while this research acknowledges the distinction between sex and gender, it still conceptually operates under the lens of a gender dichotomy. This limits the findings to a traditional understanding (and distinction) of the ideas of femininity and masculinity. Future research could also examine whether feminine gender identity and the gender-schema that consumers possess (e.g., highly masculine, highly feminine, androgynous etc. [Bem 1981]) moderate the relationship between gender-role ideology and financial literacy.

Finally, this research provides only an understanding of factors that might contribute to low levels of financial literacy among women, however, it does not examine potential solutions to this issue. Future research could examine how financial literacy can be effectively increased considering our stated findings. For example, what strategies might be the most effective in increasing financial literacy among women that hold traditional gender role attitudes? Would these strategies differ for women that hold egalitarian gender role attitudes? Under which conditions would these strategies be most effective?

Conclusion

This section concludes this dissertation by summarizing the key research findings in relation to the specific research aims and research questions. The objectives of this dissertation were to: 1) examine the relationship between gender role ideology and a) willingness to acquire financial knowledge and b) financial literacy among adult women in the U.S.; 2) examine the relationships between perceived financial well-being an a) willingness to acquire financial knowledge and b) financial literacy among adult women in the U.S.; 3) identify the mechanisms underlying the relationships between gender role ideology and a) willingness to acquire financial knowledge and b) financial literacy among adult women in the U.S.; and 4) identify the boundary conditions influencing the relationships between gender role ideology and a) willingness to acquire financial knowledge and b) financial literacy among adult women in the U.S.

To meet these objectives, this research developed a conceptual framework grounded on gender role literature and expectancy-value theory to examine whether traditional gender role ideology was an antecedent for low financial literacy scores and willingness to acquire financial knowledge among women. To gain a deeper understanding of how these relationships operated and guided by expectancy-value theory, I hypothesized that these relationships would be mediated by financial self-efficacy and attainment value regarding financial matters simultaneously. Moreover, to examine under which conditions these relationships would operate, I hypothesized that they would be moderated by parents' and peers' influence regarding financial matters and masculine gender identity. Finally, financial literacy and willingness to acquire financial knowledge, in turn, were hypothesized to predict expected future financial security, a dimension of perceived financial well-being.

To achieve the objectives, I employed two quantitative studies. The first study aimed to test the conceptual model using structural equation modelling by analyzing data collected via an online survey distributed through MTurk. The second study aimed to complement Study 1 by further examining the relationships between gender role ideology and 1) willingness to acquire financial knowledge, 2) financial literacy, 3) financial self-efficacy, and 4) attainment value attached to financial matters via a scenario-based online experiment distributed among undergraduate and graduate business students.

Despite limitations discussed earlier in this chapter, such as sample size for both studies, I find evidence to suggest that 1) traditional gender role ideology is linked to lower financial literacy levels, 2) higher degree of masculine gender identity makes this relationship ever more negative, and 3) that willingness to acquire financial knowledge has a positive relationship with expected future financial security. Thus, this research has met research objective #1, and partially met research objectives #2 and #4 as not all the hypotheses related to these objectives were supported. Research objective #3 was not met, as the findings do not find evidence to suggest mediation among our variables.

Contrary to my predictions, we find evidence to suggest that 1) traditional gender role ideology is linked to higher willingness to acquire financial knowledge, and that 2) masculine gender identity dampens the relationship between gender role ideology and attainment value attached to financial matters. These findings coupled with the research limitations, provide avenues for further research. For example, future research could collect a larger sample to test the hypotheses. Moreover, future research could employ a different methodology such as a longitudinal experimental design to account for the temporal dimension of knowledge acquisition. Additionally, future research could examine why gender role ideology is positively related to willingness to acquire financial knowledge. For example, future studies could examine whether compensatory processes might explain this positive relationship. Finally, from a practical standpoint, future research could examine what type of solutions can by undertaken to improve financial literacy among women holding traditional gender role beliefs. Similarly, it is important to consider issues beyond individual factors to this problem. Future research could examine systemic and structural disparities (historic and contemporary) that promote financial literacy inequalities, not only among men and women but also considering our contemporary understanding of the multiplicity of the concept of gender.

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APPENDIX

APPENDIX

STUDY 2 SCENARIOS

Egalitarian-Implicit Condition

Please read the text excerpt below:

"Societal gender roles differ from culture to culture. Egalitarian societies believe that certain societal roles can be carried out by any gender. For example, the roles of the homemaker and caregiver, and those of the breadwinner and head of household can be equally carried out by men and women. Outside of the family sphere, people choose whichever profession they want according to egalitarian gender roles, with more women carrying out professions traditionally considered masculine (e.g., engineering or finance) and men carrying out professions traditionally considered feminine (e.g., teaching or nursing)."

Please think of a situation where you acted in accordance with egalitarian societal gender roles as described in the text above. With this situation in mind, take a moment to write a few sentences describing the situation and why you think it is an example of egalitarian societal gender roles:

Egalitarian-Explicit Condition

Please read the text excerpt below:

"Societal gender roles differ from culture to culture. Egalitarian societies believe that certain societal roles can be carried out by any gender. For example, egalitarian societies believe that fathers and mothers are equally responsible in providing financially for their children, and mothers can work if they desire to. Outside of the family sphere, people in egalitarian societies might choose their profession in accordance with egalitarian gender roles. For example, egalitarian societies believe that men and women are equally good in dealing with finances, and men and women are equally interested in finances."

Please think of a situation where you acted in accordance with egalitarian societal gender roles as described in the text above. With this situation in mind, take a moment to write a few sentences describing the situation and why you think it is an example of egalitarian societal gender roles:

Traditional-Implicit Condition

Please read the text excerpt below:

"Societal gender roles differ from culture to culture. Traditional societies believe that certain societal roles should be carried out based on gender. For example, the roles of the homemaker and caregiver are usually carried out by women while the roles of breadwinner and head of household are usually carried out by men. Outside of the family sphere, people choose their profession according to traditional gender roles, with more men choosing professions traditionally considered masculine (e.g., engineering or finance) and women choosing professions traditionally considered feminine (e.g., teaching or nursing)."

Please think of a situation where you acted in accordance with traditional societal gender roles as described in the text above. With this situation in mind, take a moment to write a few sentences describing the situation and why you think it is an example of traditional societal gender roles:

Traditional-Explicit Condition

Please read the text excerpt below:

"Societal gender roles differ from culture to culture. Traditional societies believe that certain societal roles should be carried out by a specific gender. For example, traditional societies believe that a father's major responsibility is to provide financially for his children, and mothers should work only if necessary. Outside of the family sphere, people in traditional societies might choose their profession in accordance with traditional gender roles. For example, traditional societies believe that men are usually better in dealing with finances than women, and men are usually more interested in finances than women."

Please think of a situation where you acted in accordance with traditional societal gender roles as described in the text above. With this situation in mind, take a moment to write a few sentences describing the situation and why you think it is an example of egalitarian societal gender roles:

BIOGRAPHICAL SKETCH

Lorena Garcia Ramon was born in Coahuila, Mexico and moved to the U.S. to pursue higher education. She obtained a BBA with a double major in Marketing and French Studies in 2012 from the University of Texas – Pan American. Subsequently, she obtained an MBA from the University of Texas – Pan American. In 2016, she entered the Ph.D. in Business Administration with a concentration in Marketing at the University of Texas Rio Grande Valley and graduated in 2022. She may be reached via email at lorena.garciaramon@utrgv.edu.