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# The Influence of Descriptive Norms on Investment Risk

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## ABSTRACT

This study examines the effect of descriptive norm messages (i.e., highlighting what others are doing) on intentions to increase investment risk. Evidence shows that alarming numbers of people nearing retirement insufficiently save for this next life stage. In addition, research finds that differences exist in investment risk tolerance between men and women, with many women investing too conservatively. This finding is of particular concern as women typically experience longer lifespans, thus relying on accumulated savings for longer periods of time. The present study extends work in financial marketing by examining the influences of social norms and peer influence, constructs shown to be instrumental in guiding behavior. An experiment using 182 U.S. student subjects tested the hypothesis that introducing descriptive norms concurrently with certain variables (financial self-efficacy and gender traits) influences the level of risk taken within investment portfolios. The results did not support the hypothesis; however, we did find support for the existence of differences in investment risk between genders and show that financial self-efficacy is associated with greater financial risk taking.

## INTRODUCTION

Enjoying a comfortable retirement is a common goal shared among many of today's workers. However, this goal is in jeopardy, as many Americans do not save enough to support themselves once they leave the job market. Recent surveys by the *Wall Street Journal* show that close to sixty percent of workers reportedly have less than \$25,000 in total household savings and investments excluding their homes (Greene and Monga 2013). Moreover, median households headed by a person aged 60 to 62 have less than one-quarter of what is needed to maintain their current standard of living in retirement (Browning 2011). Even accounting for additional savings vehicles such as pensions, individual retirement accounts, and other plans, many Americans remain underfunded. The U.S. personal savings rate has shown a two-decade declining trend, dropping from almost nine percent in the 1980s, down to five percent in the 1990s, and bottoming out at close to zero today (Guidolin and La Jeunesse 2007, p. 491; Thaler and Benartzi 2004). This lack of preparedness combined with falling confidence in the sustainability of both Social Security and Medicare are forcing many workers to delay retirement well past age 65 (Helman, Copeland, and VanDerhei 2008, 2009).

While many people indeed face financial difficulties, some are attempting to plan and save, but face a number of obstacles. When choosing how to accumulate savings, people often face a multitude of options that prove to be confusing and intimidating

(Goldstein, Johnson, and Sharpe 2008). Research shows that when evaluating investment options, limitations exist as to how many of the options consumers will actually evaluate before giving up (Sethi-Iyengar, Huberman, and Jiang 2004). In addition, some consumers attempt to educate themselves financially, but this too can be difficult and ineffective. It is common to see advertisements by financial firms promoting an array of tools and educational seminars to help consumers with their decisions. However, for all the anticipated benefits of these programs and seminars, they often prove ineffective in helping people choose a clear path for accumulating savings (Benartzi, Thaler, and Sunstein 2007; Choi, Laibson, Madrian, and Metrick 2002; Duflo and Saez 2002).

Just as worrying as the overall lack of financial preparedness are the pronounced differences in levels of investment risk tolerance between men and women. As a rule, allocating more savings to 'risky' investments such as stocks and less to 'safer' fixed income vehicles increases financial risk, but over the long run increases retirement savings because these riskier types of assets provide more long-term growth in portfolio value (Butler and Domain 1991; Hickman, Hunter, Byrd, Beck, and Terpening 2001; Levy and Spector 1996; Markowitz 1952). With women tending to enjoy longer lifespans and thus relying upon accumulated savings for longer durations of time, increasing portfolio value is critical. In general, it is difficult to attribute the degree of risk-taking to a single trait. Instead, it is thought to be influenced by a variety of characteristics including personality traits, perceived importance by the individual, and age level (Byrnes, Miller, and Schafer 1999; Figner and Weber 2011).

Depicting one gender as being more risk seeking or risk averse overall is a difficult task. However, when it comes to financial risks, evidence supports that gender differences exist when it comes to financial decisions and degree of investment risk tolerance (Goldsmith, Goldsmith, and Heaney 1997; Meier, Kirchler, and Hubert 1999). This stream of research finds female investors to be more risk averse than their male counterparts (Cohn, Lewellen, Lease, and Schlarbaum 1975; Powell and Ansic 1997; Xin, Inman, and Mittal 2008). This risk aversion can be a detriment to long-term portfolios as it can discourage the inclusion of relatively risky assets such as stocks compared to less-risky bonds. This contradiction suggests that it is important for financial education to focus especially on ways to encourage women to invest wisely.

While prior research has examined the role of social norms in different contexts (recycling, littering, energy conservation, alcohol use, and tax evasion), research linking these norms with investment behavior is notably absent. Therefore, a question that arises is whether and, more specifically, under what conditions, do social norms act as a guiding force in investment decision-making? The present research addresses this question by examining factors thought to encourage consumers to rely upon social norms rather than seek solutions on their own. To

identify the drivers that prompt consumers to look to social norms for guidance, the current research examines a number of factors and constructs. Drawing upon rich theories of consumer decision-making, behavioral finance, and social norms, the current study seeks to identify when norms act as influencers within an investing context and more importantly, the existence of boundary conditions that minimize their effectiveness in such situations.

By filling the existing gap in the literature, the current research seeks to contribute to the theoretical foundation of social norms by empirically testing the effects of norm messaging and variables that possibly moderate subsequent behaviors. The three major objectives of the present study are to illustrate (1) that willingness to make risky investments can be influenced through norm messaging, (2) that the effects of norm messaging are more significant in influencing female participants than among male participants, and (3) that financial self-efficacy moderates the influence of norm messaging on risk taking.

The remainder of the paper contains the theoretical foundation where the relevant literature is reviewed to derive four research hypotheses. Next, the method and results of the tests are presented. Finally, theoretical contributions, limitations, and guidance for further research are discussed, followed by a discussion of managerial and policy implications.

## **THEORETICAL FOUNDATIONS AND RESEARCH HYPOTHESES**

Risk aversion often manifests itself in an investment portfolio through a lack of stock ownership, which can be a drag on long-term performance. Studies demonstrate numerous benefits of holding risk-based assets (stocks) in a portfolio including, a lowering of overall risk (Nuttall and Jahnke 2000), dampening volatility (U.S. Securities and Exchange Commission), and insulating against the effects of inflation though the long-term growth of assets (Markowitz 1952). Although it is encouraging to note recent media attention given to this lack of financial preparedness, little is known about the factors that influence individual investment decisions (Clark-Murphy and Soutar 2005). If marketers can correctly identify the mechanics of investment decisions, they can efficiently identify and target consumers as part of a broader strategy to encourage better financial planning. The processes of identification and encouragement provide the focus of the current study. To accomplish these tasks the study examines two constructs: social norms and peer influence.

Prior research identifies the construct of social norms as an influence on consumer decision-making (Jacobson, Mortensen, Cialdini 2011; Reno, Cialdini, and Kallgren 1993). Defined as common behaviors and attitudes of a collective group that govern acceptable behavior, social norms have considerable impact on decision-making. The primary driver behind social norms is peer influence. Peer influences frequently have a greater impact on individual behavior than any other factors or traits including biological, personality, family, religious, and cultural (Berkowitz and Perkins 1986; Perkins 2002). It is this peer influence operating through social norms that the current paper proposes to be a key factor when consumers seek appropriate answers when faced with ambiguous choices. In other words, consumers often base their decisions on perceived social norms, or what they think peers do and believe.

## Social Norms

Social norms are a collection of common behaviors and attitudes that govern acceptable behavior within a group. Examples of social norms include giving up a seat for an elderly person, saying, “Bless you” when someone sneezes, and leaving a tip for a waiter or waitress. While many social norms are unwritten and not expressed as fixed laws of society, they nevertheless are influential in shaping behavior and societal expectations. Social norms are influential in many areas including recycling, littering, energy conservation, alcohol use, and tax evasion (Jacobson, Mortensen, and Cialdini 2011). Just as with other laws, violating social norms can carry a range of social punishments depending on the severity of the offense.

There are two types of social norms, injunctive and descriptive (Cialdini, Reno, and Kallgren 1990). Injunctive norms are behaviors most people believe to be correct or an individual’s perception of what others typically believe one should do. Descriptive norms, on the other hand, are based on what others are actually doing regardless of the injunctive norm. In other words, injunctive norms are the commonly approved or disapproved of actions within society while descriptive norms reflect what is actually done in society. Both types of norms encourage social behavior (Reno, Cialdini, and Kallgren 1993) and act as beacons in situations that are novel, ambiguous, uncertain, or threatening (Deutsch and Gerard 1955; Griskevicius, Goldstein, Mortensen, Cialdini, and Kenrick 2006; Tesser 1983).

Descriptive norms have been shown to wield considerable influence in a number of situations. Experiments emphasizing a pro-social descriptive norm approach have been successful in campaigns to reduce littering (Cialdini, Reno, and Kallgren 1990), increase recycling behaviors (Cialdini 2003), and increase hotel towel reuse (Goldstein, Cialdini, and Griskevicius 2008). Descriptive norms can also encourage antisocial or nonconforming behavior (Griskevicius, Goldstein, Mortensen, Cialdini, and Kenrick 2006) if contrasted against injunctive norms. These conflicting messages can impair the effect of an intended appeal (Cialdini et al. 1990; Griskevicius et al. 2006).

In addition, research finds that using descriptive norms to shape behavior is not always effective for entire groups of people. A study by Gerber and Rogers (2009) that looks at descriptive norms and motivation to vote illustrates this limitation. The study concludes that emphasizing that many people do in fact intend to vote and an expectation of high voter turnout is more effective than emphasizing a reluctance to vote and a low expected turnout. Further, the study finds that using descriptive norms affects only a certain population of voters, those who claim to vote infrequently or occasionally. Based on these findings, it is expected that using descriptive norms to encourage certain investing behaviors will be more successful among certain groups of people than among others.

Peer influences are a core component of social norms as they have a greater impact on individual behavior than do biological, personality, family, religious, cultural, and other influences (Berkowitz and Perkins 1986; Perkins 2002). A seminal study in the area of

social norms and peer influence (Perkins and Berkowitz 1986) examines alcohol consumption among college students. The research shows that many students frequently overestimate the amount of alcohol consumed by their peers, encouraging the belief that overconsumption is typical behavior. This tendency to misperceive peer behavior is worrying because it can encourage inappropriate actions if individuals look to peers for guidance. In other words, if individuals are unsure of the correct behavior or action for a particular situation and subsequently act based on expected peer behavior, it is possible for suboptimal decisions to result. In the context of investing behavior, research finds that most adults fail to acquire competency in financial knowledge (Benish 1998; Landstrom 1995) and that this knowledge influences both investment decisions and confidence in these decisions (Chen 1998; Forbes and Kara 2010). Based upon these findings, the current paper posits that many people who are unsure when it comes to making appropriate investment decisions look to peers for guidance.

#### Premise for Study

The present study sought to accomplish three objectives. The first was to evaluate the effects of descriptive norm messages on the propensity for increased investment risk. In this research, investment risk refers to the maximum amount of investment risk someone is comfortable taking (Schaefer 1978). It is expected that a descriptive norm (what others do) message promoting increased investment risk through stock ownership is be more effective at influencing intended behavior than an injunctive norm message (what they should do). Thus:

H1: A descriptive norm message describing increased risk through stock ownership is more likely to increase intentions to increase investment risk than an injunctive norm message.

#### Gender Differences in Risk Taking

While the role of women in families and society has undergone significant change since the publication of *The Feminine Mystique* in the early 1960s (Lewis 1979), a number of studies show that many women remain more risk-averse, especially financially, than some of their male counterparts (Bernasek and Shwiff 2001; Chow 1992; Cohn, Lewellen, Lease, and Schlarbaum 1975; Goldsmith and Goldsmith 2006; Goldsmith, Goldsmith, and Heaney 1997; Jianakoplos and Bernasek 1998; Powell and Ansic 1997; Xin, Inman, and Mittal 2008). Jianakoplos and Bernasek (1998) use data from the Federal Reserve System's Survey of Consumer Finances (SCF) to conclude that women are relatively more risk averse in their asset holdings than single men or married couples and that many women perceive themselves to be less inclined to take risks. Bajtelsmit and VanDerhei (1997) describe significant gender differences in investment of pension assets among men and women, with women being more likely to allocate to fixed income alternatives and less likely to invest in employer stock. Gender differences in risk taking also appear cross culturally. A study by Zinkhan and Karande (1991) shows that both female American and female Spanish MBA students are significantly less likely to take business risks than male students are. Women are also less satisfied than men are with their financial situations (Hira and

Mugenda 2000), but are reluctant to alter their investment decisions after being presented with educational materials showing they invest too conservatively (Employee Benefit Research Institute 1994). Other studies show gender differences exist in awareness and knowledge among 401(k) plan participants (Salisbury, Silverman, and Yakoboski 1994) and a reluctance on the part of many women to take additional financial risks to increase their wealth (Goldsmith and Goldsmith 2006). Relatedly, a study by Barber and Odean (1999) find men to be aggressive and comfortable accepting added risk to achieve their targeted investment goals, whereas women tend to be more risk averse and choose conservative options in this domain.

Two chief explanations account for gender differences in risk tolerance: biological-based and social-based (Felton, Gibso, and Sanbonmatsu 2003). Biological-based explanations hold that differences in risk tolerance in general can be attributed to sex and gender differences (male-female) with hormones and genes being the underlying basis (Kuhnen and Chiao 2009; Pawlowski, Atwal, and Dunbar 2008). Biological theories also cite evolutionary reasons for higher overall risk aversion among women (Wilson and Daly 1985). Social-based explanations on the other hand suggest gender socialization (masculinity-femininity) are the root cause for differences in risk tolerance. Specifically, men and women learn social expectations through a socialization process (O'Guinn and Faber 1989; Slovic 1966), and they behave in accordance with societal expectations (Eagly 2009).

Based upon established literature that gender differences exist in risk tolerance, it is expected that, all else being equal, gender influences the level of financial risk taken by people. In particular, males are more likely to take on additional investment risk through stock ownership than are females. Thus:

H2: Compared with females, males are more risk seeking in their investment portfolios as measured by the level of stock ownership.

### Self-Efficacy

Self-efficacy is defined as a person's belief about their capability of organizing and executing courses of action to achieve a goal (Bandura 1977). Self-efficacy is one of the best predictors of successful performance across many areas (Bandura 1994, 1997; Marlatt 1985) as it increases one's level of confidence in the capacity to execute certain behaviors (Stajkovic and Luthans 1998). Belief in one's self-efficacy impacts the accomplishment of certain goals as well as the level of effort and persistence a person demonstrates in the face of obstacles (Appelbaum and Hare 1996). Research finds that self-efficacy influences a number of constructs including depression (Maciejewski, Prigerson, and Mazure 2000), stress, quality of life (Prati and Pietrantonio 2010), and dietary knowledge and behavior (Rimal and Moon 2009).

Relevant to the current paper, self-efficacy influences a number of financially related contexts as well. Specifically, in the areas of investment knowledge and its influence on

investing (Forbes and Kara 2010), gender differences and retirement saving strategies (Dietz, Carrozza, and Ritchey 2003), wealth accumulation and portfolio choice (Chatterjee, Finke, and Harness 2011). The present research employs the term “financial self-efficacy” as this type of efficacy is more relevant to the purposes of the current paper. Defined as the belief in one’s capability in achieving one’s ultimate financial goals (Forbes and Kara 2010), financial self-efficacy is not influenced solely by level of financial literacy or financial skills alone. Rather, factors such as personality, family history, social and cultural norms, and frames of reference also contribute to one’s financial self-efficacy (Hira 2010). As such, financial self-efficacy is expected to mediate the effects of descriptive norm messages differently among subjects. More specifically, based upon findings that social norms and peer influence guide behavior in unfamiliar situations, it is expected that subjects with traits of low financial self-efficacy are more influenced by descriptive norm messages promoting increased investment risk as compared to people with traits of high financial self-efficacy. This hypothesis is based upon the expectation that individuals with low financial self-efficacy, more so than those with high financial self-efficacy, turn to the actions of their peers as guidance when making decisions involving uncertainty. While it is expected that descriptive norm messages will guide individuals in situations involving uncertainty and when the correct or appropriate course of action is unknown, it is expected that the level of the norm’s influence varies based on financial self-efficacy. Thus:

H3a: A descriptive norm message promoting increasing financial risk through stock ownership increases the intentions of people with low financial self-efficacy to increase risk.

H3b: A descriptive norm message promoting increasing financial risk through stock ownership has no influence on people with high financial self-efficacy.

## METHOD

### Participants and Procedure

Study participants were 182 undergraduate students enrolled at a large public university in the United States who volunteered to participate in return for extra credit. Sixty-four percent (n = 116) were female. The survey was approved by the university institutional research review procedure. University undergraduate students were seen as ideal subjects in one respect as many will be working in various professional settings in a few years. Many of these students will face the critical task of deciding how to allocate contributions within 401(k) plans and other pension-type programs. In addition, younger employees have the most to gain by participating in these programs as they have the promise of exponential growth through long-term acceleration of compound interest (Dietz 1968; Malliaris and Malliaris 2008). Participants were not told specifics about the study other than financial risk would be measured. Participants were given the option to not participate as well as stopping the survey and leaving at any time without any consequences.



To test the hypotheses one and two, the study used a 2 (norm condition: descriptive norm versus injunctive norm) X 2 (gender: male versus female) between-subjects design. The injunctive norm condition acted as a control condition to which the hypothesized effects of the descriptive norm were compared. We emailed the student participants a link to an online survey that they were given seven days to complete. The survey link randomly assigned participants to one of the two normative conditions, descriptive or injunctive.

#### Variables

The independent variable, norm message, was manipulated by directing participants to one of two messages (see Tables 1 and 2). Participants directed to the descriptive norm condition were presented with a message about recent college graduates taking on more risk in their 401(k) plans by increasing their stock allocations. This message presented data from a hypothetical financial confidence index portraying recent college graduates as more comfortable taking on added investment risks. Thus, it portrayed how peer investors were allocating their investments. Participants directed to the injunctive norm condition were presented with a message about the long-term benefits of investing a consistent amount of money on a regular basis (dollar-cost-averaging) that suggested what investors should do. Both messages were created to imitate similar descriptive and injunctive appeals and were presented in the form of a Wall Street Journal article. A manipulation check was included as part of a successfully administered pretest conducted on fifteen participants.

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Table 1

Experimental Condition

Descriptive Norm Condition

#### Confidence Index of Recent College Grads: Optimism Grows

After a summer of discontent, Wall Street Journal's Retirement Confidence Index - a monthly barometer of confidence among recent college graduates - has surged in the past eight months due to sharp increases in risk tolerance and the amount invested in stocks. The index, based on the Wall Street Journal's survey of young professionals, registered 68 for this past February and 62 for January, after several months hovering between 48 and 52. Readings below 50 show a decline in confidence; numbers above 50 indicate expansion. The studies show a sharply higher tolerance for risk, reflected in a jump in stock investments and a drop in cash. "Younger workers seem to be more optimistic than they have been in some time," one professional said. Another analyst, John Templeton, remarked that, "what we are seeing and what these numbers tell us is that large numbers of recent college graduates are choosing to increase the risk level in their 401(k) plans by investing more of their money in stocks rather than in more conservative options like cash and CDs." Templeton went on to say, "in addition to investing more of their money into stocks, risk tolerance of younger workers is increasing, with more of them recognizing the risk-reward tradeoff.

The Confidence Index finds that close to 75% of recent college graduates have investment accounts characterized as aggressive in terms of risk, which suggests accepting risk is back in favor. "As the stock market has surged in the past fifteen months, younger workers are gaining confidence and we are seeing more workers invest in stocks and take on more risk

in their portfolios," added Templeton. "Clients are more interested in getting cash to work than prior months."

Table 2:

Experimental Condition

Injunctive Norm Condition

### Establishing a Dollar-Cost-Averaging Plan

There are a number of ways for people to invest money. One popular method is dollar-cost averaging. Dollar-cost-averaging is a hybrid of active trading and buy and hold investing. The technique involves a person adding a fixed amount of money to a chosen investment on a regular basis.

Dollar-cost-averaging is designed to purchase products at predetermined intervals and at set amounts. Instead of investing money in one lump sum, a person works his or her way into a position by slowly buying smaller amounts over a longer period of time. This allows a person to buy more shares when prices are low and fewer shares when prices are high. Thus, dollar-cost- averaging results in lowering the total average cost per share of the investment, giving the investor a lower overall cost for the shares purchased over time.

There are three steps to starting a dollar-cost averaging plan. First, decide exactly how much money you can invest each month. Second, select an investment that you want to hold for the long term. Finally, at regular intervals, invest that money into the security you have chosen.

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The dependent variable (level of investment risk) was measured by presenting participants with a question asking them to indicate on a sliding scale (ranging from 0% to 100%) how much of a \$75,000 inheritance they would invest into stocks:

Suppose an eccentric uncle left you an inheritance of \$75,000, stipulating in his will that you not spend any of the money, but instead use it for your future. You have four investment options to choose from: a bank savings account, certificates of deposit, corporate bonds, and individual stocks. You may invest in any combination of the four options or in any one option individually to suit your specific investment goals. Please indicate on the sliding scale the percentage of the inheritance you would invest in individual stocks.

The percentages of the dependent variable ranged from 0 to 100% with a mean of 33% (SD = 21%). The mean investment risk was 25%, and the positive skewness (1.076) indicated that these participants were relatively risk averse in this simulation.

The latent variable, financial self-efficacy, was operationalized using a reflective five-item Likert scale based on extant literature modified to fit the purpose of the current research (see Table 3). A confirmatory factor analysis was performed using AMOS 19 to assess the measurement properties of the financial self-efficacy scale. The results suggested removing

one item from the initial five, leaving four items to operationalize this construct. The CFA results showed that the four items formed a unidimensional scale with reasonable internal consistency:  $\chi^2 = 4.439$  on 2df,  $p = .109$ , TLI = .975, CFI = .992, RMSEA = .082, SRMR = .0246. The AVE was .565, the construct reliability was .835, and Cronbach's alpha was .83. Scores on the summed scale ranged from 5 to 18 ( $M = 11.7$ ,  $SD = 2.5$ ). The distribution of financial self-efficacy scores was dichotomized at the median to create two groups, those low in financial self-efficacy ( $n = 93$ ) and those higher in financial self-efficacy ( $n = 89$ ).

**Table 3**

**Financial self-efficacy scale items and CFA results**

Item	Regression Weight
I do NOT feel I am qualified for the task of making personal investment decisions. (R)	.904
I am confident in my ability to make personal investment decisions.	.799
Using investment information available is well within the scope of my abilities.	.669
My past experiences increase my confidence that I will be able to successfully make personal investment decisions.	.598

Where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree

**ANALYSIS AND RESULTS**

We tested the hypotheses using ANOVA. To test hypotheses one and two, that a descriptive norm message would increase intention to take greater investment risk and that men are more likely to take investment risks than women, we ran a 2 X 2 ANOVA with group membership (reading a descriptive versus injunctive message) and gender as the independent variables, with reported percentage invested in individual stocks as the dependent variable. The results revealed a significant main effect for gender ( $F(1, 178) = 8.9$ ,  $p = .003$ ,  $\eta^2 = .047$ ), but neither the interaction effect nor the main effect for message were significant. Thus, the results showed that the descriptive social norm did not increase investment risk over the injunctive message (H1), but as hypothesized by H2, men reported greater intention to take investment risks (38.9%,  $SD = 24.2$ ) than women did (29.6%,  $SD = 18.2$ ).

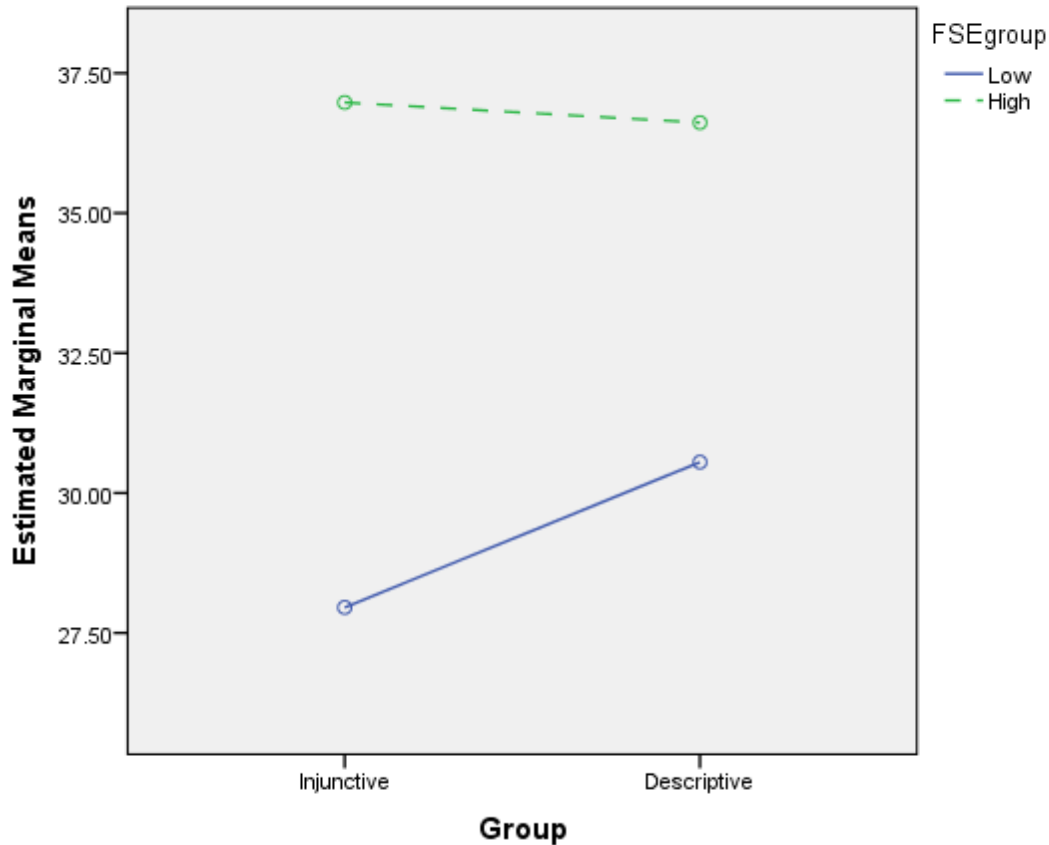
To test hypotheses 3a and 3b, a second 2 X 2 ANOVA was run with message group (injunctive versus descriptive) as before and with financial self-efficacy (low versus high) as the second independent variable. The results showed a non-significant interaction effect and a non-significant main effect for message, but the main effect for financial self-efficacy was significant ( $F(1, 178) = 6.0$ ,  $p = .015$ ,  $\eta^2 = .047$ ), with the low self-efficacy group reporting a lower mean investment percentage (29.3%,  $SD = 19.8$ ) than the high self-efficacy group (36.7%,  $SD = 21.5$ ). Thus, hypotheses 3a and 3b were not supported, but the

analysis did show that individuals higher in financial self-efficacy took riskier investment decisions with their money than those lower in financial self-efficacy (see Table 4).



Table 4

Estimated Marginal Means of Suppose an eccentric uncle left you an inheritance of \$75,000, stipulating in his will that you not...-Percentage of the inheritance you would invest in stocks:



## DISCUSSION

The current paper addresses the issue of inadequate savings among Americans by testing hypotheses suggested by the theory of social communication. The first hypothesis is that a descriptive norm message encourages financial risk taking in investment decisions more effectively than does an injunctive message. The results of an experiment exposing participants to different types of such messages failed to support the hypothesis. The second hypothesis predicts males seek more risk in their investment portfolios than females. This hypothesis was supported and the finding is consistent with a body of research showing that indeed men are more risk taking than women. The third hypothesis holds that effectiveness of descriptive versus injunctive norm messages depends on degree of financial self-efficacy. The results of testing the hypothesized interaction did not support the hypotheses, but inspection of the direction of the differences in Figure 1 suggests that there was a non-significant tendency for the participants who were low in financial self-efficacy to respond more positively to the descriptive message than to the injunctive message, while participants high in financial self-efficacy reacted equally to both message

types. Thus, the study findings suggest that there might be some merit in the proposals so they deserve further study.

#### Marketing and Policy Implications

Understanding how companies can use social norms to encourage better planning and saving behaviors is of great importance. If it can be shown empirically that descriptive norms influence investment risk tolerance there would be significant implications for decision makers in both product marketing and public policy.

The U.S. retirement market currently stands at almost \$18 trillion and is projected to grow to \$22 trillion by 2016 (Correia 2012). As “baby boomers” make the decision to retire, many are faced with having to move the assets they have accumulated during their working careers. These assets typically find homes in savings vehicles such as individual retirement accounts (IRAs) offered through financial institutions. The sheer size of this anticipated shift in assets offers compelling reasons for marketers to understand the influential power of descriptive norms because even small changes in investment strategies might yield substantial benefits.

In addition, there has been a dramatic decline in recent years in the prevalence of defined benefit plans (pensions) as corporations move to defined contribution plans (e.g., 401(k), 403(b)) (Malliaris and Malliaris 2008). This switch to defined contribution plans shifts the primary responsibility of choosing one’s investments from the employer to the employee. As such, financial professionals are playing an increasingly important role in helping people make appropriate financial choices. If by using these norms, marketers can guide appropriate investment behaviors, these norms can be used in advertisements and other promotional efforts to encourage adequate preparations for retirement.

Lastly, if descriptive norms can be used to influence financial behaviors, marketers can use them to encourage consumers to consider purchasing additional financial products. Research finds that the more relationships customers have with one financial institution, the more likely they are to stay with that institution (Strategic Business Insights 2012). Further, certain products such as life insurance and annuities do not have the traditional connotation of “retirement vehicle” but nevertheless are used as such and are attractive to financial institutions for the hefty margins they generate (Armstrong 2013). By understanding how descriptive norms influence financial behaviors marketers will have an additional tool when encouraging consumers to consider these types of products.

Policy makers stand to benefit as well. Despite the numerous educational programs designed by governmental and private organizations, as well as federal regulations designed to encourage planning, Americans are not saving enough (Benartzi, Thaler, and Sunstein 2007). The purpose of the current paper is to offer a complementary approach to the traditional methods used by policy makers that are indeed helpful but not fully adequate. By successfully promoting peer behaviors of taking action to achieve a more secure retirement and expectations of enjoying a comfortable retirement life, policymakers

can begin easing the burden on social welfare programs such as Social Security and Medicaid.

Many consumers face strong headwinds in their plans for enjoying a comfortable retirement, the strongest of which is a significant lack of savings. While the two economic crises of the past decade have undoubtedly impacted many savings portfolios, these downturns are not solely to blame. Long-term irresponsible spending must also share the responsibility. Perhaps just as concerning as the overall lack of preparedness among consumers are the differences in preparation among men and women. It is critical that people are aware that the investment decisions they make today can negatively impact their plans for a secure retirement. By investing too conservatively, benefits of the risk-return dynamic of owning stocks (Markowitz 1952) are jeopardized. This risk-return dynamic is especially important for women as they are expected to live longer and are playing larger roles in family financial decisions (Center for Disease Control and Prevention 2011).

Building upon empirical findings that many adults fail to acquire competency in investment knowledge (Benish 1998; Landstrom 1995) the current paper proposes social norms act as a beacon for many people. Specifically, when faced with choices of how to invest their assets, many people who are less confident in their abilities look to behaviors of their peers. In addition, the current paper hypothesized that the construct of financial self-efficacy acts as a mediator in certain financial situations. More specifically, when presented with a message of peers taking on added financial risks, consumers low in financial self-efficacy will show a more pronounced change in intentions to increase financial risk as compared with consumers high in financial self-efficacy.

Despite strides made in gender equality, differences remain, differences that negatively impact retirement savings. The present research draws upon three key factors that likely hinder the plans of many women of enjoying a comfortable retirement: income levels, investment risk tolerance, and life expectancy. Compensation studies find that women are frequently paid less than men are, regardless of how long they are employed (United States Government Accountability Office 2011). Further, women earn on average, over \$10,000 less than men do in the same position for various reasons including time spent out of the workforce to have and raise children and other caregiving obligations (AARP Public Policy Institute Report 2012, U.S. Census Bureau 2010 Report). Further, given that retirement and pension benefits are typically based on accumulated earnings during one's working career, women can expect to receive less once retired than male pensioners. The second factor, investment risk tolerance in portfolio construction is just as important. Portfolio allocation is critical to long-term investment performance with some studies claiming allocation accounts for well over one-half of total long-term return (Nuttall and Jahnke 2000). Further, evidence shows that well-diversified portfolios tend to reduce overall portfolio risks and reduce fluctuations of total portfolio value (U.S. Securities and Exchange Commission). In addition, based on the relationship between risk and expected return (Markowitz 1952) if retirement assets are invested too conservatively, long-term asset

growth is sacrificed resulting in a lower aggregated amount. Finally, life expectancy is critical when it comes to how long one can maintain his or her lifestyle when relying upon accumulated assets. Here, women face an additional disadvantage due to longer life expectancies. As such, women can expect to rely upon their accumulated savings for a longer period of time, thus making appropriate asset allocation critical (Center for Disease Control and Prevention 2011).

#### Limitations and Avenues for Further Research

Surprising, the current study found overall stock allocations of both males and females fell towards the lower end of the risk spectrum (mean of 33%). Existent research finds younger participants typically allocating larger portions of their portfolios to stocks. Research conducted by the Investment Company Institute (2013) found participants in their twenties had 74 percent of their 401(k) assets invested in stocks. As a comparison, the same study found individuals in their sixties had roughly 48 percent of their 401(k) assets invested in stocks. Thus, the finding that only 33 percent allocated to stocks may be a limitation to the study, but is encouraging as it offers a direction for future exploration.

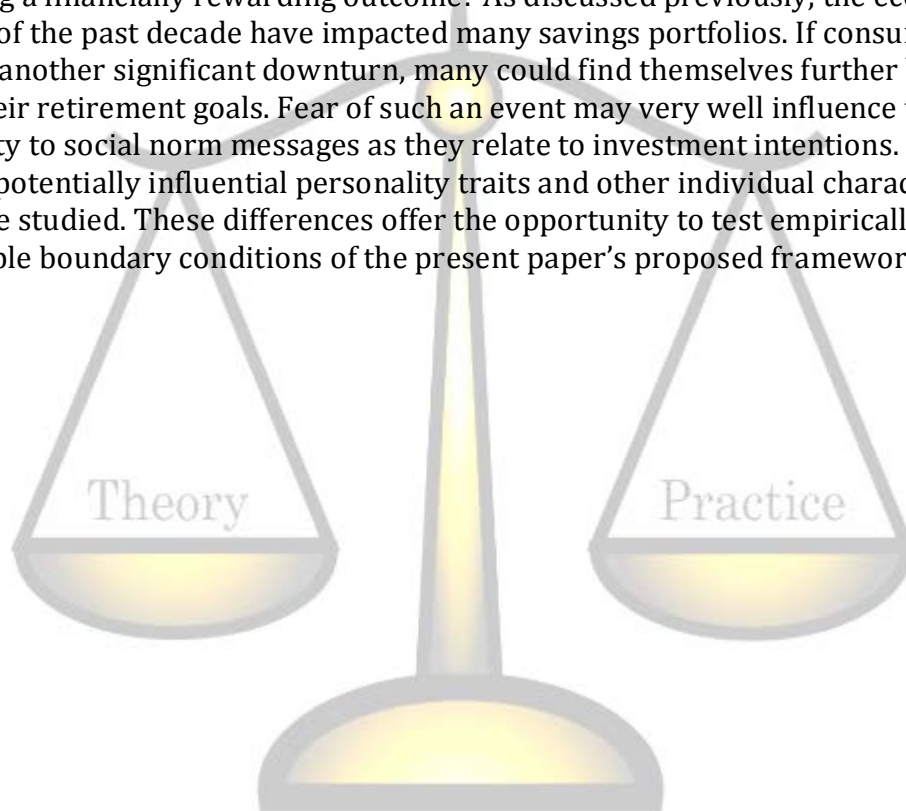
The present research identifies several areas for future study and suggests several propositions. The construct of social norms adds a new dynamic to the fields of retirement planning and behavioral finance. Specifically, based upon empirical research that finds social norms to be influential in many decision-making contexts, the current paper maintains that social norms have the potential of guiding consumers towards improved investment behaviors. While the generalizability of the current research is limited because the findings are more suggestive than conclusive, encouraging aspects remain. One limitation of the study could be the nature of the sample. While university students were viewed as ideal subjects as many will soon be making investment decisions, the fact that some have not yet had an opportunity to gain a considerable amount of experience may have hindered the results. Perhaps conducting a future study of working professionals who have had actual investment opportunities and experience would yield supportive results. An additional limitation could be the nature of the messages presented, specifically the injunctive message of dollar-cost-averaging. Perhaps this message was too closely related to financial decision-making, thus priming participants exposed to the message into a financial state of mind. Further research should investigate whether differing message cues impact subjects' intentions to increase investment risk.

One promising direction for future research stems from findings by Prudential Research (2010-2011) showing some women are choosing to play a more active role in their finances. These findings present a valuable opportunity to understand these changing gender roles and their impact on the effectiveness of social norms. An additional direction for further research is the impact that financial education programs have on behavior. Recognizing the need to improve financial literacy, a wide range of government agencies along with private and nonprofit organizations have pushed for the availability of more educational opportunities for consumers (Fox, Bartholomae, and Lee 2005). While the effectiveness of these programs remain in question (Lusardi and Mitchell 2007; Morrin,



Broniarczyk, and Inman 2012), examining the relationship between these programs and social norms would aid in better understanding consumer behavior. Finally, future studies must consider the impact of relevant moderating variables, such as reference groups (aspirational and dissociative), prior investment success, and current economic climate.

Research examining the role of reference groups may find subjects to be more responsive to appeals that feature aspirational groups (e.g., financially successful individuals) than similar appeals featuring less successful groups (e.g., individuals living in poverty, struggling to make ends meet). In addition, researchers could examine other moderators including prior investment success and the effect of economic climate. For example, does experiencing an unpleasant financial outcome prompt different investment intentions than experiencing a financially rewarding outcome? As discussed previously, the economic downturns of the past decade have impacted many savings portfolios. If consumers were to suffer from another significant downturn, many could find themselves further behind in reaching their retirement goals. Fear of such an event may very well influence the susceptibility to social norm messages as they relate to investment intentions. Moreover, an array of potentially influential personality traits and other individual characteristics remain to be studied. These differences offer the opportunity to test empirically these and other possible boundary conditions of the present paper's proposed framework and hypotheses.



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