

South Dakota State University  
**Open PRAIRIE: Open Public Research Access Institutional  
Repository and Information Exchange**

---

Consumer Sciences Faculty Publications

Consumer Sciences

---

2015


# Financial Anxiety, Physiological Arousal, and Planning Intention

John Grable  
*University of Georgia*

Wookjae Heo  
*South Dakota State University, wookjae.heo@sdstate.edu*

Abed Rabbani

Follow this and additional works at: [https://openprairie.sdstate.edu/consumer-sci\\_pubs](https://openprairie.sdstate.edu/consumer-sci_pubs)

 Part of the [Business Commons](#), [Counseling Commons](#), [Counseling Psychology Commons](#), and the [Finance Commons](#)

---

## Recommended Citation

Grable, J., Heo, W., & Rabbani, A. (2015). Financial Anxiety, Physiological Arousal, and Planning Intention. *Journal of Financial Therapy*, 5 (2) 2. <https://doi.org/10.4148/1944-9771.1083>

This Article is brought to you for free and open access by the Consumer Sciences at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Consumer Sciences Faculty Publications by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact [michael.biondo@sdstate.edu](mailto:michael.biondo@sdstate.edu).

# Financial Anxiety, Physiological Arousal, and Planning Intention

**John E. Grable, Ph.D., CFP®**

**Wookjae Heo, M.A.**

**Abed Rabbani, M.S.**

*University of Georgia*

**Recipient of the 2014 Financial Therapy Association's Annual Conference  
Outstanding Research Paper Award**

*Results from this exploratory clinical study indicated that financial anxiety—holding an unhealthy attitude about one's financial situation—and physiological arousal—the physical precursor to behavior—play important roles in shaping consumer intention to engage in future financial planning activity. Findings suggested that those who are most likely to engage the services of a financial adviser exhibit low levels of financial anxiety and moderate to high levels of physiological arousal. The least likely to seek the help of a financial adviser were those who exhibited high financial anxiety and low physiological arousal. Results supported findings documented in the literature that high anxiety levels often lead to a form of self-imposed helplessness. In order to move those experiencing financial anxiety towards financial solutions, financial advisers ought to take steps to simultaneously reduce financial stressors and stimulate arousal as a way to promote behavioral change and help seeking.*

*Keywords: stress; anxiety; financial stress; psychophysiological; economics; financial anxiety*

## INTRODUCTION

Imagine the following situation. A financial counselor has been invited to make a presentation about retirement planning issues to a firm's employees during a lunch time seminar. The room is full because the firm's owner has strongly been encouraging her employees to attend. At the end of the session, a few of the attendees approach the counselor and ask for a business card. Now, consider a situation where a financial planner is meeting with a prospective client. The prospect has reached out to the planner based on a family member's referral. It quickly becomes apparent to both the prospect and planner

that the financial planner has the tools, skills, and products to help the prospect. Weeks go by, but the prospect never returns. Also consider a situation when a financial therapist assigns specific homework for her client that should be completed by the next session. When the next client-therapist meeting occurs, the therapist learns that the client has failed to take action on the homework assignment.

These examples represent some of the frustrations faced by those working in the financial counseling, financial planning, and financial therapy domains. The common thread among these examples is the apparent lack of action on the part of the client or prospective client. Consider again the counselor who has just finished a review of retirement planning issues. The body of literature on information search and help-seeking behavior indicates that individuals engage in initial self-diagnosis and cost/benefit calculations as the first step in determining whether to engage in any behavior, including meeting with a financial adviser (broadly defined in this paper as a financial counselor, financial planner, or financial therapist) (Johansen, 2013; Ratchford, 1982; Seiler, 2013). That is, someone may be faced with numerous financial challenges, but until that person judges these issues as personally threatening, they will be unlikely to seek help (Grable & Joo, 2001). In this example, a few people in the audience recognized that they had retirement concerns. They further calculated that the benefits associated with reaching out to the counselor outweighed the costs (e.g., time, effort, cost, etc.) associated with the behavior. It is also possible that some attendees felt that it was not the right time or that the service being offered was inappropriate. While the counselor may be pleased that some in the audience were interested in learning more, she may also be perplexed that the majority of attendees failed to take advantage of the opportunity to improve their current and future financial situation. The planner in the second example is likely equally confused. The initial meeting seemed to go well. The prospective client appeared to be engaged in the process by answering questions openly and honestly. The prospect even made an appointment to return, but ultimately did not. The financial planner likely chalked this experience up as a lost opportunity and wondered what he could have done differently. Similarly, the financial therapist may feel perplexed at her client's inaction on behavior that was designed to improve attitudinal and behavioral outcomes.

While the information search and help-seeking literature provides useful insights into what prompts someone to initially seek help, the literature is relatively silent in explaining what drives people to take future action on intended behavior. For example, the literature provides little guidance to help a financial counselor encourage those in a seminar to follow up with a one-on-one meeting. Likewise, there is little empirical evidence to help a planner understand what client factors should be assessed or what actions need to occur to promote follow-up action on the part of a prospective client. The same holds true for financial therapists who may be frustrated with the lack of or inconsistent implementation on the part of some clients.

This paper uses an exploratory data analysis to help address this gap in the literature; namely, this paper helps explain what prompts some individuals to take future financial counseling/planning/therapy action. In order to address this issue, this study looks at the ways financial anxiety and physiological arousal are related to the likelihood

and intention of engaging in financial planning, where financial planning is specifically tied to meeting with a financial adviser in the future. This paper provides a matrix of planning intention based on anxiety and arousal levels as a model to help financial advisers better understand how to generate action among current and prospective clientele.

### CONCEPTUAL FRAMEWORK

Recently, a few researchers have moved into the space of trying to explain what occurs both attitudinally and physiologically when a financial adviser meets with a current or prospective client. Although very small in numbers, these researchers and publications have led to the development of a burgeoning field of study called psychophysiological economics. According to Grable (2013), psychophysiological economics research is focused on the assessment and evaluation of psychological and physiological events as they pertain to economic behavior. Theoretically, those who study psychophysiological economic phenomenon presuppose that behavior and cognitive processing are linked and that behavioral, cognitive, and physiological tools can be combined to explain and predict behavior, as well as to create interventions that improve the economic well-being of consumers (Kandasamy et al., 2014). Models of psychophysiological economics attempt to relate the peripheral nervous system to economic behavior. As a refresher, the peripheral nervous system includes the spinal and cranial nerves (Rickle, 1972). The Autonomic Nervous System (ANS) regulates glands and other internal organs (i.e., visceral structures). Together, these structures control involuntary physiological activities and behavior. Psychophysiological researchers measure the sympathetic nervous system as a person responds to stressors within the environment. As noted by Grable, "It is precisely how someone reacts physiologically to specific economic stressors, rather than how they plan to react, that is of interest to psychophysiology economics researchers" (p. 16).

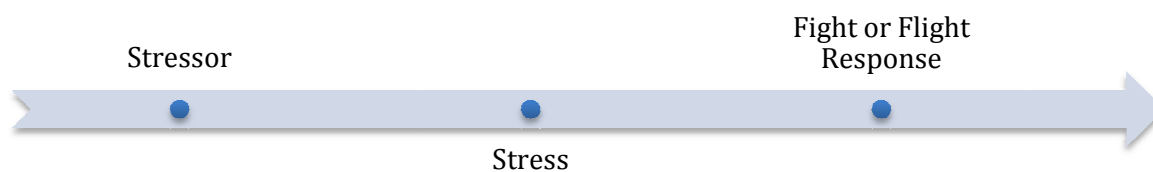
Physiological reactions to stressors tend to be situational (Sapolsky, 1994). Two people may experience the same stressor, yet the level of arousal caused by the stressor can be quite different. When stress does occur, mostly involuntary responses follow. Consider the way in which stressors are processed in the human brain, as described by Everly and Sobelman (1987). The brain stem administers initial information. The reaction is almost instantaneous. People experience this type of stress reaction whenever they are surprised or caught off guard (e.g., feeling a spider crawl across your arm). Information is then forwarded to the limbic system. If a person perceives the stressor as a threat, the limbic system is engaged so that the body is prepared to exert excess energy. The brain will flood the body with chemical instructions that cause a person's internal glands and organs to almost immediately increase heart rate and breathing. These chemicals also cause the overproduction of sweat (skin conductance), as well as reducing peripheral blood flow, which, in turn, reduces skin temperature. If, on the other hand, a stressor produces little arousal or is perceived as non-threatening, then other stress responses come into play. One of the first psychophysiological economics studies was conducted by Britt and Grable (2012). Their experimental study revealed that the way a financial planner's office is designed has a direct influence on the physiological stress experienced by prospective clients. They noted that financial advisers who want to control the stress levels of clients should remove barriers between the client and adviser. They recommended designing an

office space that includes comfortable chairs and low tables. Grable and Britt (2012a) also documented that financial news can influence the physiological stress experienced by clients. Interestingly, they found that positive financial news, rather than negative or bearish news, produced the greatest stress response. They concluded that business news programs, general news, and other potential stressors be removed from client waiting room areas.

In a review paper, Grable and Britt (2012b) explained why financial advisers should be interested in psychophysiological studies. Essentially, they noted that the human stress response may be the key to understanding why some people willingly engage in financial counseling/planning/therapy and others do not. Further, what has since been termed psychophysiological economics appears to offer a relatively robust explanation as to how behavioral intention and action can be promoted. Unfortunately, however, none of the psychophysiological or neuro-finance studies published to date have specifically tested the relationships among anxiety, arousal, and future counseling/planning/therapy behavior.

The links among stressors, stress, and behavior have been hypothesized as shown in Figure 1. This original hypothesis, while somewhat naive, was based on the work of Selye (1974) and others (e.g., Everly & Sobelman, 1987). The notion underlying the hypothesis, as applied to the delivery of financial advice, is that once someone begins to feel anxious or stressed as the result of their financial situation or environment (i.e., stressor), a “fight or flight” physiological response will kick in (i.e., stress response). Based on the hypothesis, the greater the stress, the less likely a current or prospective client will want to engage in proactive counseling/planning/therapy. If the hypothesis is true, then financial advisers should do everything possible to control or minimize stress experienced in the working environment.

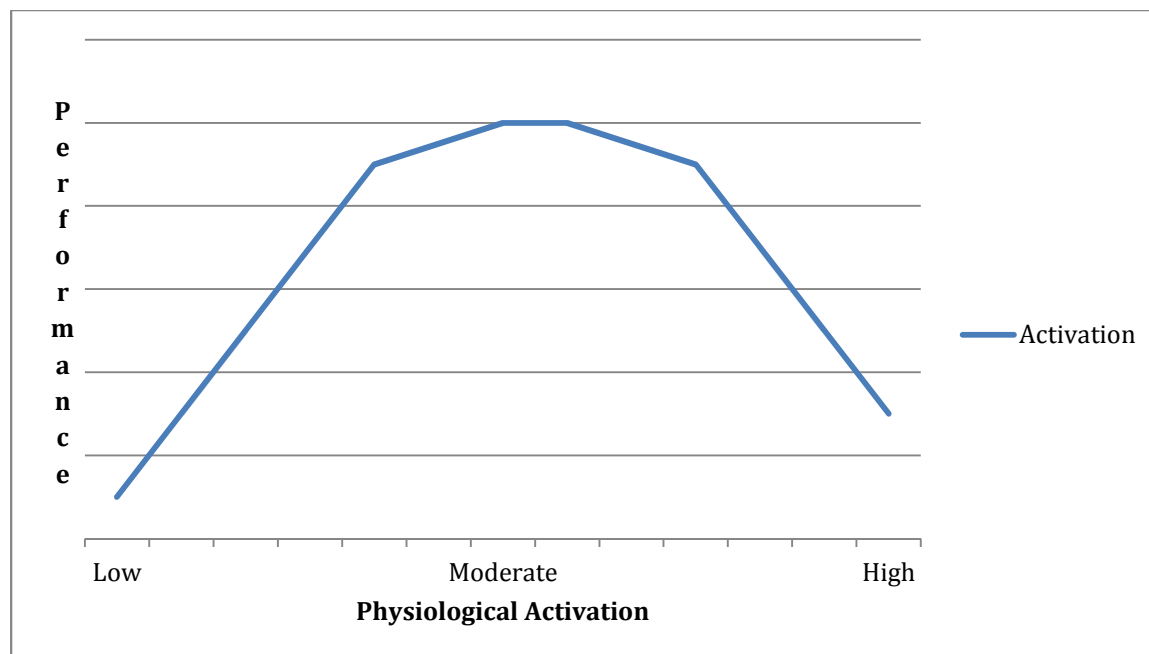
**Figure 1. Original hypothesized psychophysiological behavioral associations**



As suggested above, the “fight or flight” hypothesis, as it relates to financial counseling/planning/therapy situations, may be naive in failing to consider that stressors can be both positive and negative. From media (e.g., newspapers, radio, and television) reports, one might assume that stress responses are always a bad thing. The term distress is so widely used that many people today assume that all stressors lead to distress, which, in turn, leads to negative behavioral outcomes. However, it is important to note that stress can often be a good thing. Psychophysiologicals refer to positive stress as eustress. Malmö (1962) documented that rather than being linear, as suggested in Figure 1, the stress response resembles an inverted-U relationship (Figure 2). Imagine, for example, an athlete who is about to engage in a rigorous physical activity. If the athlete’s level of stimulation is

low, then performance will also be low. On the other hand, an athlete that is overstimulated will exhibit less than optimal performance. Athletes need more than moderate stimulation to achieve optimal performance. It is reasonable to hypothesize that within the domains of financial counseling/planning/therapy a similar relationship may exist. More specifically, performance can be replaced by planning likelihood and intention, while stimulation/activation can be substituted with the dual concepts of financial anxiety and physiological arousal. The following literature review is devoted to defining the concepts of financial anxiety and physiological arousal.

**Figure 2. Relationship between physiological activation and performance**



## REVIEW OF LITERATURE

The question of what prompts someone to take action to meet with a financial adviser is one that has received very little attention in the literature. Firms spend millions of dollars attempting to arrive at an answer to this question, but for the most part, this line of research tends to be very proprietary and unpublished. Within academia, this line of inquiry has received little empirical investigation primarily because the fields of financial counseling, financial planning, and financial therapy are so new that researchers have had to devote much of their time describing behavior rather than explaining or predicting behavior. Additionally, some in academia look at the notion of help-seeking research as manipulative and counter to the consumer interest (DeLiema, Yon, & Wilber, 2014). That is, some view models that explain factors that can help promote help-seeking behavior and/or recommendation implementation as controlling and somewhat unethical (DeLiema et al.; Pope & Vetter, 1992). While there is always the possibility that an unscrupulous adviser may use a tool, technique, or model in a manipulative manner, it is also true that without

explanatory models of behavior financial advisers will be left to their own creative devices to move people beyond intention to action. Whether these approaches are useful, efficient, or ethical will remain undocumented until basic research is undertaken.

### ***Financial Anxiety***

According to the American Psychological Association (2013b) *Stress in America Survey*, the majority of Americans living today experience some degree of anxiety. The top source of anxiety, according to the *Stress in America Survey*, is money, followed closely by work and the economy. These three factors clearly are causes of financial anxiety, which is defined to mean a psychosocial syndrome that results in someone having an unhealthy attitude toward thinking about, engaging with, or administering their personal financial situation in an effective manner (Burchell, 2003). When asked, most people indicate that they do a relatively good job at managing their overall feelings of anxiousness. It is common for people to report managing anxiousness and stress by reading, spending time with friends and family, exercising, and shopping.

Researchers often measure overall anxiety, and financial anxiety in particular, using subjective evaluations (Archuleta, Dale, & Spann, 2013). For example, the American Psychological Association (2013a) promotes a 10-point scale to evaluate general anxiety levels. As expected, individual responses tend to be well distributed along this scale. While the majority of Americans today report low to moderate levels of anxiety, approximately 20% to 25% of the population report a great deal of anxiousness (American Psychological Association, 2013b). Most often, those in the highest anxiety categories also exhibit stress to such an extent that their situation can be categorized as chronic, which means that their stress situation is ongoing, unresolved, long-lasting, and illness inducing (American Psychological Association, 2013b).

It has been relatively well established in the literature that effective financial decision making is related to both financial competencies and levels of financial anxiety (Shapiro & Burchell, 2012). Research suggests that those experiencing financial stress have a difficult time making decisions (Ackert, Church, & Deaves, 2003). Shapiro and Burchell (2012) noted that individuals who experience financial anxiety have a subliminal bias in processing financial information. They also noted that those with an anxious disposition toward a cognitive engagement with their finances are more likely to use avoidance mechanisms, which is a defense procedure. While anxiety certainly can lead to other behaviors, the finding reported by Shapiro and Burchell fits well with a hypothesis that high levels of anxiety can lead to a form of learned helplessness (Porges, 2011). That is, rather than deal directly with the cause of one's financial anxiety, those who are financially anxious often avoid or dismiss the cause entirely.

### ***Physiological Arousal***

Within the physiological and psychological fields, the term arousal is often used interchangeably with intensity and activation. Arousal refers to a person's physiological preparation for overt behavior (Duffy, 1972). In effect, arousal is a precursor to behavior or

activity. It is worth noting that someone can experience arousal without ever engaging in activity. Arousal varies by degree. This is illustrated in Figure 3. At any given time, a person may be totally relaxed or excited or they may exhibit an intermediate arousal condition. The degree of arousal has a direct influence on subsequent action. High levels of arousal lead to physiological expenditures of energy in preparation for high output physical exertion. What is most interesting, however, is that the way in which the body prepares for overt action, based on arousal, is the same regardless of the potential activity (Sapolsky, 1994).

**Figure 3. Phases of arousal**



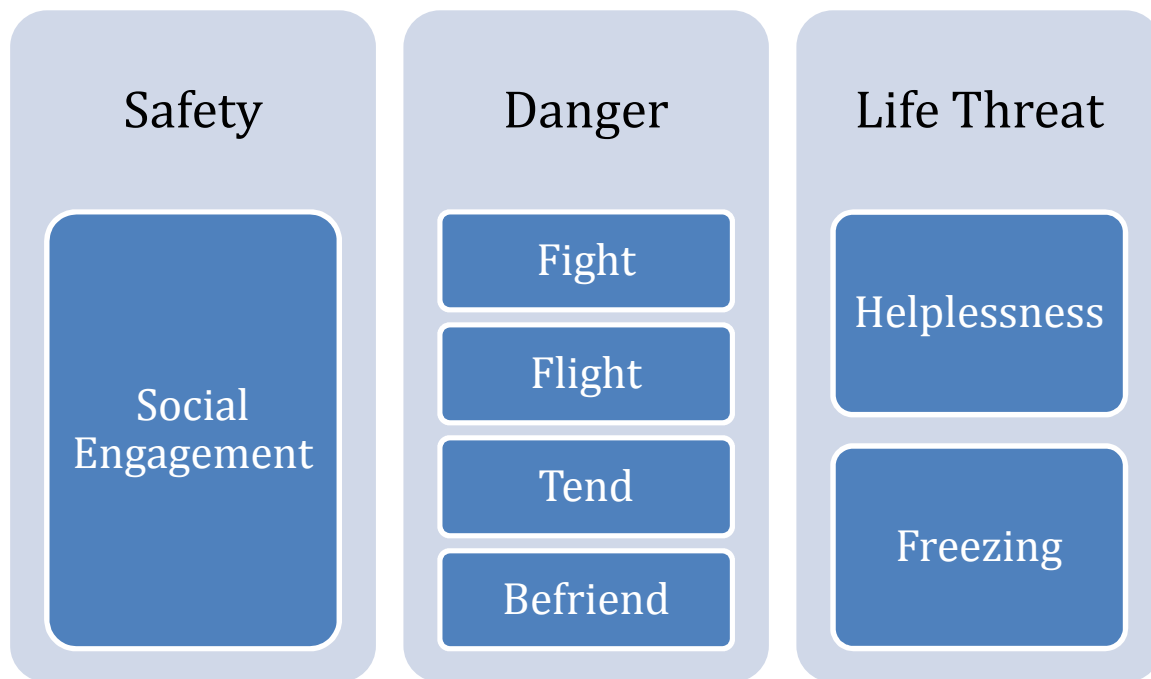
The notion that the body's (and mind's) first and primary reaction to an arousal stimulus occurs through sympathetic nervous system processes associated with the transfer of energy has profound implications for financial advisers. Suppose, for example, that two people experience a stressor. The stressor for one person may be the surprise of being approached by a stranger on a deserted city street. The other person's stressor may be hearing that a stock held within their portfolio lost 20% of its value overnight. Although the stressors are different—one physical and the other emotional—the initial physiological reaction is the same (Sapolsky, 1994). The mind sends signals to the body to prepare for the immediate expenditure of energy to prepare for future action. It does not matter that in the first case this response (i.e., preparation for physical action) is appropriate, but not suitable in the second situation. In either case, the overt action taken by these individuals will depend on their level of arousal and stressor perception.

An urban mythology has dominated thinking about the common stress response and arousal. Today, it is a challenge to find someone who has not heard of the "fight or flight" response. This phrase was coined by Cannon (1932). Based on clinical tests, Cannon documented how the mind and body work together to categorize stressors and develop stress responses. The concept of "fight or flight" traditionally holds that when a person experiences a high level of arousal, their physiological response will tend to be one of fleeing the situation or confronting the source of the stress. Consider again the person who is approached by a stranger on a lonely city street. If the approaching person is viewed dangerously, the "fight or flight" response may, in fact, come into play. If, on the other hand, the approaching stranger is quickly determined to be a police officer, a reaction other than the "fight or flight" response will occur (Sapolsky, 1994). This story illustrates that how a person responds to arousal is very complex. Within the context of financial therapy, the onset of declining equity prices may prompt a "fight or flight" stress response in some clients. If, on the other hand, a temporary decline in equity prices can be reframed as an opportunity, rather than an imminent threat, the stress response may be different.



As shown in Figure 4, stressors can be grouped into one of three perception categories: (a) safety, (b) danger, or (c) life threat. Stressors related to perceptions of trust can create arousal that results in a physiological response of social engagement. In effect, social engagement acts as a mechanism of stress reduction. According to Porges (2011), the Vagus Nerve provides a pathway that carries messages from the brain stem to the body (e.g., heart, lungs, intestines). When someone experiences feelings of safety (e.g., meeting a smiling stranger or encountering someone who is calm in the midst of chaos), confidence, and engagement they tend to exhibit less fear and anger.

**Figure 4. Outcomes associated with physiological arousal**



Those who perceive a stressor in terms of danger are most likely to exhibit one of four responses (Porges, 2011). The “fight or flight” response is quite common, especially among men (Sapolsky, 1994). Surprisingly, others respond to dangerous stressors in what is known as a “tend or befriend” manner. Rather than fight or flee a stressful situation, some people use the source of stress, and the accompanying arousal state, as a mechanism to help others. This pattern of stress-related behavior is often seen among women who have experienced horrific events or in situations where a mother becomes overly protective of a child who is experiencing danger or harm (Taylor, 2002).

When someone experiences what they consider to be a life threatening stressor, which results in a high level of arousal, it is possible for the mind and body to shut down. Learned helplessness is often seen in clinical studies where animals are subjected to repeated situations in which they cannot escape or win. In these situations, animals (including humans) exhibit signs of helplessness. Sometimes animals (including humans) will use forms of immobility or freezing to either send a signal to others that they are

incapable of dealing with a stressor or as a means of reducing the anticipated outcome associated with a stressor. This type of stress response is sometimes exhibited by those who have encountered several serious financial stressors concurrently (e.g., loss of job, illness, divorce, foreclosure).

### ***Summary***

The literature is clear in showing that individuals respond differently to similar stressors. The notion that “fight or flight” behavior is the primary outcome associated with stress has been replaced with descriptions of stress responses that range from relatively benign to helpful to helplessness. The literature also suggests that anxiety and physiological arousal may combine to influence financial decision making and planning intention. The remainder of this paper describes the research hypotheses, methodology, and findings associated with this study.

### ***Research Hypotheses***

The purpose of this study was to test the association between financial anxiety and planning intention and physiological arousal and planning intention. A second purpose was to develop categories of planning intention based on anxiety and arousal levels. The following hypotheses were tested:

H<sub>1</sub>: The likelihood of planning is associated with financial anxiety.

H<sub>2</sub>: The likelihood of planning is associated with physiological arousal.

H<sub>3</sub>: Categories of planning intention are associated with financial anxiety and physiological arousal, as evidenced by the following:

H<sub>3a</sub>: Financial anxiety is associated with level of planning intention.

H<sub>3b</sub>: Physiological arousal is associated with level of planning intention.

The likelihood of planning was defined in this study as a person’s prospect of meeting with a financial planner in the near future; likelihood was defined on an ordinal scale. Planning intention, on the other hand, was defined dichotomously as someone’s intention to meet with a financial planner or otherwise.

## **METHODS**

A clinical technique was used to test the research hypotheses. Financial anxiety was measured using an item that was hypothesized to represent longer-term financial stress. Physiological arousal was prompted through a clinical intervention and measured by changes in peripheral skin temperature. Measurement of these variables is described below.

### ***Participant Sample***

Twenty individuals were recruited to participate in a community outreach clinic assessment interview. The clinic serves a diverse population in a mid-sized city in the southeastern United States. Clinic services include marriage and family therapy, nutritional support, financial counseling, financial planning, financial therapy, and legal guidance. Participants were recruited with fliers distributed within walking distance of the clinic and through person-to-person solicitations. Upon completing the study, participants received a \$15 payment. The project was approved by the research team's university human subjects IRB office.

The sample was representative of the community. Approximately 55% of participants were male. Ages ranged from 20 to 63, with a mean and standard deviation of 31 and 11 years, respectively. The majority of participants were married or living with a significant other. Racial and ethnic background was diverse. Approximately 40% of participants were White, with the remainder indicating being either African American/Black or Asian. The majority were also employed either full- or part-time, although three participants were unemployed. Earnings ranged from \$0 to over \$20,000 per month, with a mean and median reported income of \$2,138 and \$1,233, respectively ( $SD = \$4,960$ ).

### ***Measurement of Financial Anxiety***

Each participant completed an intake questionnaire that was designed to assess subjective indicators of personal and financial anxiety, wealth, risk tolerance, and financial knowledge, as well as other demographic and socioeconomic factors. Of primary importance to this study, participants were asked to indicate their current level of financial anxiety. A 10-point response scale was used, with 1 being the lowest score and 10 indicating the highest tally. The mean, median, and standard deviation for the item was 4.95, 4.50, and 1.91, respectively. The mean score matched almost precisely with the American Psychological Association's (2013b) average stress score for Americans (i.e., 4.9 on a 10-point scale).

Answers to the financial anxiety question were hypothesized to represent longer-term financial stress. This assumption was tested by correlating participant anxiety scores to a financial stress scale (see Archuleta et al., 2013). Scores on the scale were estimated by summing responses to the following seven items: (a) I feel anxious about my financial situation; (b) I have difficulty sleeping because of my financial situation; (c) I have difficulty concentrating on my school/or work because of my financial situation; (d) I am irritable because of my financial situation; (e) I have difficulty controlling worrying about my financial situation; (f) My muscles feel tense because of worries about my financial situation; and (g) I feel fatigued because I worry about my financial situation. Participants were asked to answer using a scale where 1 indicated always and 7 represented never. The mean and standard deviation scores for the summated scale were 38.55 and 9.01, respectively. Given the scale's coding, lower scores represent greater anxiety. The scale's

Cronbach's alpha was .95. The single item anxiety measure was found to be significantly correlated with scores on the anxiety scale ( $r = -.65, p < .01$ ).

### ***Measurement of Physiological Arousal***

After completing the intake questionnaire, each participant was relocated from the clinic's waiting room to one of the clinic's interview rooms. Each participant was told that they were going to meet with a clinic staff person for a short meeting. At this time, participants were connected to a Bio-Infinity® physiological assessment device that measured peripheral skin temperature. The same room was used for all 20 participants. After baseline measurements were achieved (i.e., stable temperature), the clinic staff interviewer entered the room. The participant and staff member sat across from each other at a small round table at a 45-degree angle. The staff person then asked a series of questions that required participants to either answer using a 10-point scale or through open-ended dialogue.

### ***Likelihood of Planning and Planning Intention***

At the end of the interview, participants were asked, "On occasion, the clinic offers financial planning services to the community. If an opportunity arose to meet with a financial planner, on a scale of 1 to 10, with 10 being absolutely certain and 1 being very unlikely, how likely is that you would be willing to set up an appointment to meet with a financial planner?" Scores ranged from 2 to 10. The mean, median, and standard deviation of scores was 6.78, 7.50, and 2.29, respectively. In general, participants were interested in returning to the clinic for financial planning services. Even so, 20% of those who participated in the study reported being unlikely to return to obtain planning services; these participants responded with a score of 2, 3, or 4. Group characteristics (e.g., employment status, income, gender, and age) were found to be similar across categories. Participants were re-categorized into one of the following two groups for analysis purposes: (a) those likely to meet with a financial planner, and (b) those unlikely to meet with a financial planner. This new variable was titled planning intention.

### ***Data Analyses***

Tests were made to assess the level of association among the three variables of interest in this study. The hypotheses that stated, "The likelihood of planning is associated with financial anxiety" and "The likelihood of planning is associated with physiological arousal" were evaluated using independent samples Mann-Whitney U tests. The third hypothesis, which stated that "Categories of planning intention are associated with financial anxiety and physiological arousal" was tested by categorizing participants into one of four groups based on their median anxiety and arousal scores: (1) low anxiety and low arousal (LL), (2) high anxiety and low arousal (HL), (3) low anxiety and high arousal (LH), and (4) high anxiety and high arousal (HH). Once the model was developed, the framework was tested using both a Kruskal-Wallis and multivariate analysis of variance (MANOVA) test. The Kruskal-Wallis non-parametric test was employed to determine if the distribution in financial anxiety and physiological arousal scores were the same across the

four categories of planning. MANOVA was used as an extension of traditional ANOVA analyses by evaluating group differences across more than one dependent variable. This approach was appropriate in this study because two interrelated dependent variables were evaluated. The power of the test was improved over conducting multiple ANOVA tests.

## RESULTS

A key question of interest in this study was whether or not the likelihood of planning is associated with financial anxiety and physiological arousal. Given the sample size and the exploratory nature of this study, a non-parametric Mann-Whitney U test, with a maximum p-value of .10, was used as the primary analysis tool to address this question. The median anxiety score for those likely to see a planner was 4.00, whereas the median score for those who were unlikely to meet with a planner was 6.50. The difference was significant. As such, the first hypothesis was supported.

The relationship between arousal and likelihood of planning was tested using changes in peripheral skin temperature among participants. Changes in skin temperature were calculated by subtracting end of session temperature (group Mdn = 82.66) from participant baseline temperatures (group Mdn = 83.50). This approach was used to evaluate change in arousal over the entire session. Those who were likely to see a financial planner exhibited increased arousal as measured by a reduction in skin temperature (Mdn = -1.84). Those who were less likely to make an appointment to see a planner experienced less negative arousal (Mdn = 1.32). Given these initial results, hypothesis 2 was accepted.

Tests of the first and second hypotheses provided confirmation that both financial anxiety and arousal in this study were associated with the likelihood of planning. Based on this evidence, participants were grouped into categories of planning intention as shown in Table 1: (a) low anxiety and low arousal (LL), (b) high anxiety and low arousal (HL), (c) low anxiety and high arousal (LH), and (d) high anxiety and high arousal (HH). Those whose financial anxiety score was below the median (Mdn = 4.50) were classified as having lower financial anxiety. Conversely, those with scores higher than the median were coded as having higher financial anxiety. Participants whose change in skin temperature was above the median (Mdn = -0.28) were categorized as having lower physiological arousal. Alternatively, those with scores below the median were defined as having higher physiological arousal. For example, suppose a participant's anxiety score was 3.00 and their change in skin temperature was -0.50. In this case, they would have been placed into the LH category.

**Table 1**  
**Categories of planning intention**

	<b>Less Financial Anxiety</b>	<b>More Financial Anxiety</b>
<b>Less Physiological Arousal</b>	<b>(LL)</b>	<b>(HL)</b>
<b>More Physiological Arousal</b>	<b>(LH)</b>	<b>(HH)</b>

The categories of planning intention were evaluated using a Kruskal-Wallis test, which is the nonparametric equivalent to ANOVA. In these tests, the four categories, as shown in Table 1, were used as the grouping variable. Financial anxiety was found to be significantly associated with category membership,  $H_3 = 14.91$ ,  $p < .01$ . Similarly, physiological arousal was associated with category membership,  $H_3 = 15.47$ ,  $p < .01$ . A subsequent MANOVA test was used to confirm that a significant relationship existed among and between categories, financial anxiety, and physiological arousal. Anxiety and arousal scores were entered concurrently as dependent variables. Category membership was used as the independent variable. The MANOVA was statistically significant,  $F_{3,16} = 13.90$ ,  $p < .001$  (Pillai's trace,  $V = 1.46$ ,  $F_{3,16} = 14.48$ ,  $p < .001$ ), with Box's M and Levene's Test of Equality of Error Variances both being not significant. Overall, category membership explained approximately 75% and 72% of the variance in financial anxiety and physiological arousal, respectively.

In some ways, results from the Kruskal-Wallis and MANOVA tests were expected based on the coding used to create the categories. As a follow up, a Cramer's V strength of association test was used to evaluate the relationship between categories and planning intention. A 2 x 4 contingency table was developed with being likely or unlikely to see a planner as the columns and the four categories as rows. The results of the nominal by nominal test was significant at the  $p < .05$  level,  $\chi^2 = 7.50$ , Cramer's V = 0.61. The Cramer's V statistic indicated a moderately strong strength of association. Note that while the  $\chi^2$  was significant, given the sample size, the model violated the general rule that cells should have an expected count greater than 5.0; however, the test was useful as a way to confirm grouping of participants. Although preliminary, the evidence provided support for the validity of a model of planning intention described by financial anxiety and physiological arousal. Additional support was also noted for the hypotheses that financial anxiety is associated with level of planning intention and physiological arousal is associated with level of planning intention.

### **Summary**

Table 2 summarizes this study's results. Those who had the highest planning intention (lower left quadrant) exhibited less financial anxiety and more physiological

## Financial Anxiety, Physiological Arousal, and Planning Intention

arousal (LH). Those in the lowest planning intention category (upper right quadrant) exhibited more financial anxiety and less physiological arousal (HL). More financial anxiety and more physiological arousal (HH) was related to moderate planning intention (lower right quadrant). Those with less financial anxiety and less physiological (LL) arousal were categorized as having only some planning intention (upper left quadrant).

**Table 2**  
**Planning intention categorization based on financial anxiety and physiological arousal**

	<b>Less Financial Anxiety</b>	<b>More Financial Anxiety</b>
<b>Less Physiological Arousal</b>	<b>(LL) Some Planning Intention</b>	<b>(HL) Lowest Planning Intention</b>
<b>More Physiological Arousal</b>	<b>(LH) Highest Planning Intention</b>	<b>(HH) Moderate Planning Intention</b>

## **DISCUSSION**

The key takeaway from this exploratory study is that the intention to engage in future financial planning appears to be linked with financial anxiety and physiological arousal. However, the association between planning intention and these two variables is not as straightforward as previously thought. There are some in the financial planning and investment advisory industry that believe financial anxiety and activation of stress responses help trigger planning behavior and product implementation. Consider the following often used life insurance sales tactic: reinforce the belief in social and moral obligations associated with being a parent as a way to instill fear (i.e., a form of physiological arousal) of premature death in order to prompt the sale of insurance. It turns out that this century old sales technique is not entirely incorrect; however, this sale's approach is not nearly as nuanced as it could be.

Also consider how results from this study contradict, in some respects, earlier psychophysiological economics hypotheses that assumed a 'fight or flight' response among consumers when faced with either financial anxiety or physiological arousal resulting from thinking about or acting on financial issues. The original hypotheses reported in some early studies were based on the assumption that someone who exhibited strong arousal would attempt to escape the situation and be unlikely to seek the help of a financial planner or to take proactive planning action. Results from this study, while preliminary, help to synthesize these original notions. Specifically, short-term arousal itself may, in fact, help focus attention and promote action. It is not, however, arousal alone that matters. It is the interrelationship with financial anxiety—or longer term financial stress—that appears to shape planning intention.

Individuals who are experiencing high levels of financial anxiety, with little corresponding physiological arousal, tend to be apathetic in relation to financial planning behavior. This finding fits well with the existing stress response literature that shows people who are experiencing longer-term anxiety or chronic stress also have difficulty sleeping and concentrating. They also are more likely to report being fatigued, sore, worried, irritable, and tense. In some ways, the apathetic response to planning intention is indicative of someone who views their financial situation as very threatening. As with other forms of long-term stressors, a common response is to exhibit helplessness. Rather than 'fighting or fleeing,' those with financial anxiety, but little physiological arousal, often do little to improve their situation. Evidence from this study supports this notion.

One might have guessed that if high financial anxiety, coupled with low arousal (HL), leads to low levels of planning intention, that low financial anxiety should prompt intention for planning. This thought is not entirely correct. Again, it does not appear that anxiety (or arousal) alone is sufficient to move a person towards or away from planning. Consider those who had low financial anxiety and low physiological arousal (LL). These individuals were found to have only limited intention of planning. That is, their intention was lukewarm at best. In practical terms, they might or might not actually make an appointment. A similar situation existed among those who had both high financial anxiety and physiological arousal (HH). Unlike the HL group, arousal appears to prompt some action among this otherwise apathetic group. Those fitting this profile reported moderate intention of engaging a financial planner in the future. Had the study actually been a clinical exercise, results from this study suggest that clinic staff would benefit by confirming a future appointment during the meeting. Allowing someone in the HH group to leave could cause their arousal intensity to return to a baseline level; this might shift the person from the HH group to the HL category, which would result in no later action.

The group with the highest intention of future planning included those who had lower levels of financial anxiety and higher levels of physiological arousal (LH). In many respects, this represents the profile of existing financial planning firm clientele. That is, those in this group are not experiencing long-term crippling financial stress. They are more relaxed and at peace with their financial situation. It does appear that it takes some physiological arousal to prompt these otherwise less worried individuals to focus on their financial situation. Once aroused, they are the most likely to want to engage in future planning.

Findings from this study hint at several practice management implications. First, financial advisers should not expect those who are experiencing longer-term financial anxiety to enthusiastically demand planning services. In some respects, highly financial anxious individuals may be the most difficult to move towards planning and implementation activities. Without an adjustment to reduce anxiety levels, the financial adviser may be forced to increase physiological arousal to prompt a focused reaction among this group. This, of course, could backfire and create a counterproductive stress response (Grable & Britt, 2012b). Financial therapy may be the intervention technique best suited to address anxiety and arousal issues.



## Financial Anxiety, Physiological Arousal, and Planning Intention

Second, the cleanest path towards generating an intention to plan appears to be related to helping prospective clients reduce financial anxiety. Financial therapy, counseling, and coaching strategies can be instrumental in this regard. Once financial anxiety has been reduced, it may be necessary to induce some physiological arousal related to financial planning in order to promote planning intention. This does not mean scarring a person or inflicting physical harm. Rather, physiological arousal, among the majority of clients, can be created simply by helping clients focus their thinking on the following issues:

- The client's level of financial knowledge and experience;
- The client's level of financial satisfaction;
- The client's financial risk tolerance;
- The client's short-, intermediate-, and long-term financial goals; and
- The client's life and legacy dreams.

Third, because financial anxiety and physiological arousal are dynamic factors, advisers (including financial therapists) should assume that a prospective or current client's situation will change over time. As such, it is important for financial advisers to regularly gauge each client's level of financial anxiety. As anxiety increases, it is likely that a client's behavior will change correspondingly. Understanding the role of physiological arousal is also important. It is imperative to note that while arousal was found to enhance planning intention, results from this preliminary study should not be used as evidence that placing clients under ongoing physiological stress is appropriate. Future studies are needed to determine if and/or how much physiological arousal is needed in ongoing planning relationships. It may turn out that physiological arousal is only a key determinant of initial planning behavior, and that advisers need to manage stressors in their work environment as a way to improve the client-adviser relationship (Britt & Grable, 2012).

In conclusion, this exploratory clinical study shows that a relationship among financial anxiety, physiological arousal, and planning intention likely does exist. Results add to the growing body of psychophysiological economics literature. Financial advisers should not simply assume that longer-term financial anxiety or physiological arousal results in a 'fight or flight' response in relation to planning intention. The relationship among these factors is much more nuanced. Those who report the highest planning intention levels tend to have low financial anxiety and higher physiological arousal. The lowest planning intention levels are held by those who are experiencing high financial anxiety and low physiological arousal. Future studies are needed to both replicate and extend the findings from this study. As noted above, this clinical study was exploratory in nature. The relatively small sample size limited the majority of statistical tests to non-parametric tools. Sample size constraints also created measurement issues related to testing the categories of planning intention. Future studies are needed to extend this study to include a larger participant pool. Given the overall strength of the findings, further research is warranted to examine the interrelationships between and among financial anxiety, physiological arousal, and financial planning behavior.

## REFERENCES

- Ackert, L. F., Church, B. K., & Deaves, R. (2003). Emotion and financial markets. *Federal Reserve Bank of Atlanta Economic Review*, 88, 33-41.
- American Psychological Association. (2013a). Severity Measure for Generalized Anxiety Disorder—Adult. Retrieved from <http://www.psychiatry.org/practice/dsm/dsm5/online-assessment-measures#Disorder>
- American Psychological Association. (2013b). *Stress in America: Missing the health care connection*. Washington, DC: APA. Retrieved from <http://www.apa.org/news/press/releases/stress/2012/full-report.pdf>
- Archuleta, K. L., Dale, A., & Spann, S. M. (2013). College students and financial distress: Exploring debt, financial satisfaction, and financial anxiety. *Journal of Financial Counseling and Planning*, 24(2), 50-62.
- Britt, S., & Grable, J. (2012). Your office may be a stressor: Understand how the physical environment of your office affects financial counseling clients. *The Standard*, 30(2), 5 & 13.
- Burchell, B. J. (2003). *Identifying, describing and understanding financial aversion: Financial phobes*. Retrieved from [http://martinfrost.ws/htmlfiles/financial\\_aversion.pdf](http://martinfrost.ws/htmlfiles/financial_aversion.pdf)
- Cannon, W. (1932). *Wisdom of the Body*. New York: W.W. Norton.
- DeLiema, M., Yun, Y., & Wilber, K. H. (2014). Tricks of the trade: Motivating sales agents to con older adults. *The Gerontologist*, 54. Retrieved from <http://gerontologist.oxfordjournals.org/content/early/2014/05/13/geront.gnu039.full>
- Duffy, E. (1972). Activation. In N. S. Greenfield & R. A. Sternbach (Eds.), *Handbook of Psychophysiology* (pp. 577-622). New York: Holt, Rinehart and Winston.
- Everly, G. S., & Sobelman, S. A. (1987). *Assessment of the human stress response: Stress in modern society 4*. New York: AMS Press.
- Grable, J.E. (2013). Psychophysiological economics: Introducing an emerging field of study. *Journal of Financial Service Professionals*, 67(5), 16-18.
- Grable, J. E., & Britt, S. L. (2012a). Financial news and client stress: Understanding the association from a financial planning perspective. *Financial Planning Review*, 5(3), 23-36.
- Grable, J. E., & Britt, S. L. (2012b). Assessing client stress and why it matters to financial advisors. *Journal of Financial Service Professionals*, 66(2), 39-46.
- Grable, J. E., & Joo, S. (2001). A further examination of financial help-seeking behavior. *Journal of Financial Counseling and Planning*, 12(1), 55-65.
- Johansen, K. (2013). Information search in pension plan decisions. *Applied Economics Letters*, 20, 16-18. doi:10.1080/13504851.2013.831163
- Kandasamy, N., Hardy, B., Page, L., Schaffner, M., Graggaber, J., Powlson, A. S., Fletcher, P. C., Gurnell, M., & Coates, J. (2014). Cortisol shifts financial risk preferences. *Proceedings of the National Academy of Sciences*, 111, 3608-3613. doi:10.1073/pnas.1317908111
- Malmö, R. B. (1962). Activation. In A. J. Bachrach (Ed.), *Experimental foundations of clinical psychology* (pp. 386-422). New York: Basic Books.

## Financial Anxiety, Physiological Arousal, and Planning Intention

- Pope, K. S., & Vetter, V. A. (1992). Ethical dilemmas encountered by members of the American Psychological Association: A national survey. *American Psychologist, 47*, 397-411. doi:10.1037/0003-066x.47.3.397
- Porges, S. W. (2011). *The polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation*. New York: W.W. Norton & Company.
- Ratchford, B. (1982). Cost-benefit models for explaining consumer choice and information seeking behavior. *Management Science, 28*, 197-212. doi:10.1287/mnsc.28.2.197
- Rickles, W. H. (1972). Central nervous system substrates of some psychophysiological variables. In N. S. Greenfield & R. A. Sternbach (Eds.), *Handbook of Psychophysiology* (pp. 93-124). New York: Holt, Rinehart and Winston.
- Sapolsky, R. M. (1994). *Why zebras don't get ulcers*. New York: W. H. Freeman.
- Seiler, S. (2013). The impact of search costs on consumer behavior: A dynamic approach. *Quantitative Marketing & Economics, 11*, 155-203. doi:10.1007/s11129-012-9126-7
- Selye, H. (1974). *Stress without distress*. Philadelphia: Lippincott.
- Shapiro, G. K., & Burchell, B. J. (2012). Measuring financial anxiety. *Journal of Neuroscience, Psychology, and Economics, 5*, 92-103. doi:10.1037/a0027647
- Taylor, S. E. (2002). *The tending instinct: How nurturing is essential to who we are and how we live*. New York: Holt. doi:10.1080/01612840490486845