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# The Relationship Between Personality Type And Exercise Motivation

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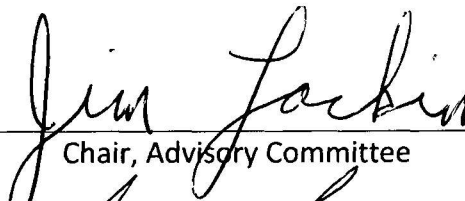
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THE RELATIONSHIP BETWEEN  
PERSONALITY TYPE AND EXERCISE MOTIVATION

By


Kayla Bowman

Thesis Approved:



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Chair, Advisory Committee



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Date August 21, 2015

THE RELATIONSHIP BETWEEN  
PERSONALITY TYPE AND EXERCISE MOTIVATION

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Master of Science  
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2015

Submitted to the Faculty of the Graduate School of  
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in partial fulfillment of the requirements  
for the degree of  
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## DEDICATION

This thesis is dedicated to my husband, Nick Bowman, and Mom, Rhonda Loop,  
for their unwavering support in everything I do.

## ACKNOWLEDGMENTS

I would like to thank my committee chair, Dr. Jim Larkin, for his guidance and patience. He spent many hours helping me, from planning out the process of the thesis to editing many versions of each chapter. His expertise was meaningful from start to finish. I would also like to thank my committee members, Dr. Jonathan Gore and Dr. Michael Lane, for their expertise. The assistance they provided was very helpful and significant to the success of this thesis. I would like to express thanks to my Mom, Rhonda Loop. This achievement was a direct result of her hard work and sacrifice to provide me the opportunity to pursue my college education. I would also like to express thanks to my husband, Nick. His support and encouragement helped me to stay the path in pursuing this achievement.

## ABSTRACT

**Purpose:** The purpose of this study was to provide further understanding of the complex nature of physical activity motivation. Specifically, the purpose of this study was to analyze personality type and internal/external autonomous regulation. **Method:** Subjects were college students age 18 years and older who attended the Fitness Five Project. Data collected from the Ten-Item Personality Inventory and the RM 4-FM: Motivation for Physical Activity Questionnaire were analyzed using a bivariate correlation. **Results:** Statistical analyses revealed the personality traits extraversion, agreeableness, conscientiousness, and emotional stability were positively associated with intrinsic motivation. Results showed the personality trait openness to experience was negatively associated with intrinsic motivation. **Summary:** Intrinsic and extrinsic motivation are both important for different reasons. It is clear from current and past research that extrinsic motivation would benefit the adoption of a new activity and intrinsic motivation would benefit the consistency and adherence to the activity.



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## CHAPTER 1

### INTRODUCTION

This study will examine the relationship between personality type and physical activity motivation. According to Bales (1970), personality relates to human behavior. It can affect many different things, including how one reacts and handles various situations. A person's collection of personality traits can equip them to be better suited for success in employment, relationships and overall happiness. This study will address whether or not personality type has a consequential connection with physical activity motivation.

#### Need for the Study

A number of researchers have acknowledged inconsistencies in the correlation between physical activity and personality type and have called for further exploration of this relationship (Vollrath & Torgersen, 2002). Davies, Mummery, and Steele (2010) found that conscientiousness, attitude, perceived behavioral control, and intention were positively related to physical activity behavior and intention. Though this finding is helpful in its relation to one personality trait, it does not include multiple personality traits.

Motivation to exercise is different for each individual and can be affected by many different factors. The frequency, intensity, and duration of exercise could be a factor in predicting motivation or amotivation. According to Duncan, Hall, Wilson, and

Jenny (2010), frequent exercisers show higher levels of intrinsic motivation, as well as the more autonomous forms of extrinsic regulation when compared to less frequent exercisers. These researchers also noted in their findings that identified regulation, an extrinsic motivation that is more autonomous on the self-determination theory continuum, is the strongest predictor of all three behavioral indices (frequency, intensity, and duration of exercise). Rhodes (2006) found the personality traits, extraversion and conscientiousness, had a consistent positive relationship with physical activity, while the emotional stability dimension had a consistent negative correlation. This led to the conclusion that, apart from all other variables, personality type can be the factor that differentiates people between being highly motivated for exercise on a daily basis, and those who struggle with the ability to keep themselves motivated for exercise. This study will attempt to gain more understanding of the relationship between these two variables.

#### Purpose

The purpose of this study was to provide further understanding of the complex nature of physical activity motivation. With the wide range of people who are active for diverse reasons, motivation is a part of each individual's will to stay consistent and maintain their efforts in exercising. By uncovering the relationship between personality and physical activity, professionals in the field can better understand and provide interventions for enhancing exercise motivation. Specifically, the purpose of this study was to analyze personality type and internal/external autonomous regulation.

## Assumptions

Assumptions of this study were that students followed directions properly, each subject understood the question being asked of him or her, and that subjects truthfully answered all questions.

## Hypothesis

Extraversion will be negatively associated with intrinsic motivation. The traits associated with extraversion are assertiveness and sociability. People who naturally have these characteristics will be more likely to exercise with others and in a form that involves social interaction. They will be more likely to change their workout plans for others who want to exercise in a different format, such as including a pick-up game of basketball or taking a group fitness class they wouldn't normally attend.

Agreeableness will be positively associated with intrinsic motivation. The traits associated with conscientiousness are generous, trusting, and warm. Those who are generous and warm are usually confident and assured in themselves and the values they hold as important.

Conscientiousness will be positively associated with intrinsic motivation. The traits associated with conscientiousness are self-discipline, dependability, and organization. Those who are self-disciplined will be more likely to understand that exercise is not solely important for aesthetics of the human body, but also the health benefits that are associated with exercise. It is advantageous to have dependability and

organizational traits to stay consistently motivated to exercise long enough to acquire the benefits exercise can provide.

Emotional stability will be positively associated with intrinsic motivation.

Those who are emotionally stable are calm and unperturbed through life events. The stability in emotion will allow them to stay intrinsically motivated for activity. Those who are highly affected by life events and unable to be flexible to changes will put more emphasis on other people's opinions and therefore lack intrinsic motivation.

Openness to experience will be negatively associated with intrinsic motivation.

This trait encompasses creativity and simplicity. People who naturally have these characteristics will be more likely to be open to different types of exercise.

#### Delimitations

Subject selection was delimited to volunteers who attended the Fitness Five Project fitness testing event. It was further delimited to the volunteers who filled out all surveys completely and correctly.

#### Limitations

A convenience sample was used for this study. A true representation of the population may not be displayed in the sample of subjects because random sampling was not used.

## Definition of Terms

### General Terms

The following “general terms” used within this study are defined below in alphabetical order:

#### Amotivation

Amotivation is a state of lacking motivation to engage in an activity.

#### Autonomous Regulation

Autonomous Regulation involves action with a full sense of willingness.

#### Autonomy

Autonomy refers to behaviors being self-determined, or freely initiated by the individual.

#### External Regulation

External regulation “refers to the desire to obtain external rewards or avoid punishments” (Duncan et al., 2010).

#### Extrinsic Motivation

Extrinsic motivation refers to motivation that comes from outside an individual, such as rewards.

#### Identified Regulation

Identified regulation “refers to being motivated to perform a behavior because it is personally significant and results in outcomes which are valued by the individual” (Duncan et al., 2010).

### Integrated Regulation

Integrated regulation is a form of motivation that arises when one has fully integrated a motivation within one's self.

### Intrinsic Motivation

Intrinsic motivation involves motivation derived from the pleasure and satisfaction of engaging in the behavior itself.

### Introjected Regulation

Introjected regulation “represents the desire to obtain intrapersonal rewards (e.g., pride) or to avoid self-inflicted punishments (e.g., guilt or shame)” (Duncan et al., 2010).

### Motivation

Motivation is the general willingness or reason(s) to do something.

### Perceived Behavior Control

Perceived behavior control is the perception of the ease or difficulty of the particular behavior.

### Physical Activity

Physical activity is “bodily movement that is produced by the contraction of skeletal muscle and that substantially produces energy expenditure” (ACSM, 2000, p. 4).

### Self-Determination Theory

Self-Determination Theory “is a theory of motivation. It is concerned with supporting our natural or intrinsic tendencies to behave in effective and healthy ways” (Ryan & Deci, 2000).

## CHAPTER 2

### REVIEW OF LITERATURE

Many people experience competing demands and responsibilities in their daily life that take a toll on their availability for physical activity. Motivation for activity or the value of its outcome can be the determining factor on whether a person opts to spend their spare time performing some type of activity throughout the course of the day. There has been extensive research on motivation, personality, and physical activity, some of which can be found below. The purpose of this study is to explore the relationship between these factors and to extend the scope of this body of literature.

#### Motivation

A critical factor in sustaining consistent exercise behavior is motivation. Even with all the vast research on the benefits of physical activity for physical and psychological health, less than 50% of adults in the United States are considered regularly physically active (Teixeira, Carraca, Markland, Silva, & Ryan, 2012). Regularly physically active was defined as participating in 150 minutes of moderately intense activity per week.

Intrinsic and extrinsic motivation are different types of motivation. Both types of motivation are good to have, and both can be determinates in the consistency of being active. Intrinsic motivation results in positive motivational consequences and is



associated with persistence at a task, while amotivation is linked to behavioral disengagement (Duncan et al., 2010). Duncan et al. (2010) obtained their research findings by examining regular exercisers who completed surveys that assessed their frequency, intensity, and duration of exercise. The subjects also completed the Behavioral Regulation in Exercise Questionnaire and four additional integrated regulation items.

Teixeira et al. (2012) completed a systematic review of 66 empirical studies. The review included empirical literature that measured autonomy, exercise motives, exercise causality orientations, and exercise self-regulation. In all cross-sectional, prospective, and experimental studies, the dependent variable analyzed was actual or self-reported physical activity. They found that identified regulation, a more autonomous form of extrinsic motivation, was more predictive than intrinsic motivation of initial/short-term adoption of physical activity.

The commitment that regular exercise entails was explored by other researchers. Mullan and Markland (1997) found that, due to the commitment and organization that exercise requires, it is not likely extrinsic motivation alone can sustain a long-term regular engagement in exercise. Edmunds, Ntoumanis, and Duda (2006) took the high degree of effort and maintenance of lifestyle into consideration throughout their research. They found with the level of effort required, often for activities that are repetitive or activities considered to be mundane, regulation by

identification with exercise outcomes may initially be more important than the fun and enjoyment the activity brings.

Collectively, this research suggests that having both forms of motivation is beneficial. Extrinsic motivation would benefit the adoption of a new activity, while intrinsic motivation would sustain the consistency and adherence to the activity.

### Self-Determination Theory

Self-Determination Theory has often been related to the exercise field. It is the continuum of autonomy that holds varying degrees of human motivation. Duncan et al. (2010) noted in their research that an individual's relative location along this continuum of self-determination is determined by the degree to which the individual has achieved satisfaction of the psychological needs for competence, autonomy, and relatedness. Teixeira et al. (2012) found a consistent positive relationship between more autonomous forms of motivation and physical activity. It was also found that intrinsic motivation is predictive of long-term exercise adherence.

Duncan et al. (2010) found that integrated regulation, a more autonomous form of extrinsic motivation, is an important determinant of exercise behavior. An example of integrated regulation is when a person feels that running is consistent with their personal values, so they continue to participate in that physical activity to be considered a runner. The existing culture and accessibility for running could be an additional component of the desire to use running as a physical activity. Running can become part

of a person's sense of identity, therefore keeping the individual consistent with this type of lifestyle. Frequent exercisers do show higher levels of intrinsic motivation and the autonomous forms of extrinsic regulation when compared to those who exercise less frequently (Duncan et al., 2010).

When humans feel their psychological needs are being supported, there is an association with increased physical activity, better mental health, and better health-related outcomes that give a greater quality of life (Ryan, Patrick, Deci, & Williams, 2008). This is an important piece of information when you take into consideration human behavior is the largest source of variance in health-related outcomes, despite the many recent technical breakthroughs in health care (Schroeder, 2007).

Physical activity is a behavior that is controllable by the individual. The Self-Determination Theory recognizes that by maximizing an individual's experience of competence, relatedness, and autonomy, the regulation of the health-related behavior, such as physical activity, is more likely to be internalized and thus the behavior will be better maintained (Williams, Deci, & Ryan, 1998).

Autonomy is important because the individual will be intrinsically motivated or will inherently enjoy the activity. This will improve the maintenance of the behavior, even outside of a controlled setting because of the inherent value the individual can see in the behavior.

Competence is a valued component because it is important the individual has confidence and skills to complete the physical activity. Competence is gained through

effective input and relevant feedback from others, including reputable and knowledgeable specialists (Ryan et al., 2008).

Relatedness is important to internalization within the Self-Determination Theory. Relatedness is when an individual can adopt the values and behaviors that is promoted by someone whom they trust and feel connected to (Ryan et al., 2008). When all three components of the Self-Determination Theory are present and strong, Ryan et al. (2008) found individuals can experience more volitional engagement in physical activity and maintain better adherence over time.

#### Autonomous Regulation

The Stages of Change Model is often used to help motivate people with a specific goal and to help understand the individual's readiness to change (Prochaska & DiClemente, 1983). Knowing where an individual is in the Stages of Change Model will help in providing the right choice of treatment or course of action. The stages, listed in order are pre-contemplation, contemplation, preparation, action, and maintenance. All of the studies that Teixeira et al. (2012) reviewed measuring stages of change for exercise participation showed that autonomous regulations increased across stages. Exercise participation was the highest in the action and maintenance stages.

Teixeira et al. (2012) found positive associations between autonomous regulations and exercise outcomes. Furthermore, it was noted that autonomous regulations mediated the effects of Self-Determination Theory based interventions on

self-reported exercise at twenty-four months and was the only regulation found to mediate the intervention effects on exercise in the long-term.

Wilson and Rodgers (2004) found that the Self-Determination Theory motivational model provided a meaningful analysis of motivational processes operating in the exercise domain and positive insights into the reasons why people intend to continue with exercise behavior. They noted that the purpose of their research was to examine the Self-Determination Theory's proposition that perceptions of 'autonomy support' predict behavioral intentions in the context of exercise.

#### Personality

The United States Department of Health and Human Services (2008) associated physical activity with better mental well-being. It would then be logical to conclude mental health could affect the practice and adherence of physical activity. Burgos-Garrido, Gurpegui, and Jurado (2011) noted that the practice of physical activity can be influenced by personality. These researchers analyzed the association of adherence to physical activity with personality traits, including temperament and character, in subjects that were attending a primary healthcare center. Their results were measured by using the International Physical Activity Questionnaire (IPAQ) for physical activity and the Temperament and Character Inventory (TCI-125) for personality. There was an inverse association of harm avoidance with physical activity and an inverse relationship between physical activity and neuroticism (Burgos-Garrido, Gurpegui, & Jurado, 2011).

Annesi (2010) found exercise had a mood-changing effect on individuals and can aid in weight loss. This effect was particularly helpful for subjects who were obese. Rhodes and Smith (2006), found higher levels of physical activity were correlated with lower neuroticism and higher extraversion and conscientiousness. This result aligns with previous studies because harm avoidance is highly correlated with neuroticism (Zuckerman & Cloninger, 1996). Harm avoidance is also highly correlated with anxiety disorders and depression. Burgos-Garrido, Gurpegui, and Jurado suggested, because of the result of their study, that anxiety reduction interventions for individuals with high harm avoidance could help improve the adherence of physical activity and could help in predicting a lifestyle that could include a lack of physical activity adherence.

## CHAPTER 3

### METHOD

#### Subjects

Subjects in the current study were college students age 18 years and older who attended the Fitness Five Project. This fitness testing event was offered free to all college students and is conducted once every fall and spring semester. Students primarily from wellness classes were encouraged to participate. The event was promoted by instructors during class and by use of flyers around campus.

#### Surveys

The Ten-Item Personality Inventory (TIPI) was used to collect data about personality type (Gosling, Renfro, & Swann, 2003). It is a ten item inventory that measures the “Big Five” (Five-Factor Model) dimensions of the following personality traits: extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. According to Gosling et al. (2003), the goal of the TIPI survey was to assess the “Big Five” personality traits quickly and in a way that optimized validity. It is often used when time is limited, but is still able to accurately examine the Five-Factor Model. This was ideal for the current study because, according to Robins, Hendin, and Trzesniewski (2001), it would reduce item redundancy, fatigue, and boredom associated with repeatedly answering questions that are very similar. Additionally, Burisch (1984) concluded that short surveys can be just as valid as long, sophisticated surveys.

The RM 4-FM: Motivation for Physical Activity Questionnaire was used to survey physical activity motivation (Deci & Ryan, 2004). This 16-item questionnaire addressed the participants' motivation to exercise. Participants indicated their reasons for exercising by using a 7-item rating scale ranging from 1 'not at all true', to 4 'somewhat true', to 7 'very true.' The data provided a score for the following areas: external regulation, introjected regulation, identified regulation, and intrinsic motivation. These scores indicated whether the participants were extrinsically or intrinsically motivated to exercise.

#### Procedure

These two assessments, the Ten-Item Personality Inventory and the RM 4-FM: Motivation for Physical Activity Questionnaire, were administered during the Fitness Five Project at a southern university. These paper surveys were given at a table first before all the other fitness tests had been initiated.

#### Statistical Treatment of Data

The data from the surveys were scored manually using paper and pencil. After each survey was scored, the results were typed into an Excel file to be organized and appropriated into columns. The data were then transferred to Statistical Package for the Social Science (SPSS) to be analyzed statistically for correlations between personality traits and motivational type. A bivariate correlation was used to conduct an analysis of the data.



## CHAPTER 4

### RESULTS

The 'Big Five' personality traits and autonomous regulation were analyzed with this data set. To test the hypothesis that extraversion is negatively associated with intrinsic motivation, a bivariate correlation analysis was conducted between extraversion and intrinsic autonomous regulation scores. Statistical analyses revealed that extraversion and intrinsic motivation were positively associated ( $r = .22, p < .01$ ), which disconfirms the hypothesis (see table 1).

To test the hypothesis that agreeableness is positively associated with intrinsic motivation, a bivariate correlation analysis was conducted between agreeableness and intrinsic autonomous regulation scores. Results showed agreeableness and intrinsic motivation were positively associated ( $r = .14, p < .01$ ), which confirmed the hypothesis (see table 1).

To test the hypothesis that conscientiousness is positively associated with intrinsic motivation, a bivariate correlation analysis was conducted between conscientiousness and intrinsic autonomous regulation scores. Analysis of the data indicated that conscientiousness and intrinsic motivation were positively associated ( $r = .23, p < .01$ ), which confirmed the hypothesis (see table 1).

To test the hypothesis that emotional stability is positively associated with intrinsic motivation, a bivariate correlation analysis was conducted between emotional

stability and intrinsic autonomous regulation scores. Results indicated that emotional stability and intrinsic motivation were positively associated ( $r = .22, p < .01$ ), which confirmed the hypothesis (see table 1).

To test the hypothesis that openness to experience is negatively associated with intrinsic motivation, a bivariate correlation analysis was conducted between openness to experience and intrinsic autonomous regulation scores. The results revealed openness to experience and intrinsic motivation were negatively associated ( $r = -.32, p < .01$ ), which confirmed the hypothesis (see table 1).

TABLE 1. Bivariate correlations among the 'Big Five' personality traits.

Big Five Traits Item		Autonomous Regulation
Extraversion	Pearson Correlation Sig. (1-tailed)	.22** .000
Agreeableness	Pearson Correlation Sig. (1-tailed)	.14** .008
Conscientiousness	Pearson Correlation Sig. (1-tailed)	.23** .000
Emotional Stability	Pearson Correlation Sig. (1-tailed)	.22** .000
Openness to Experience	Pearson Correlation Sig. (1-tailed)	-.32** .000

\* Correlation is significant at the 0.05 level (1-tailed).

\*\* Correlation is significant at the 0.01 level (1-tailed).

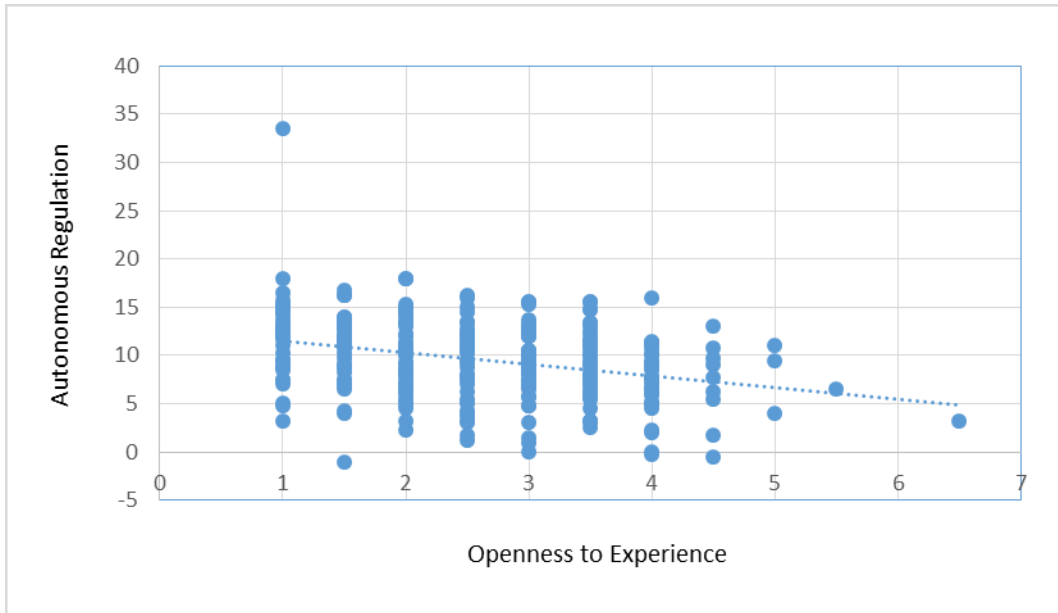


FIGURE 1. Scatterplot correlation between openness to experience personality trait and autonomous regulation.

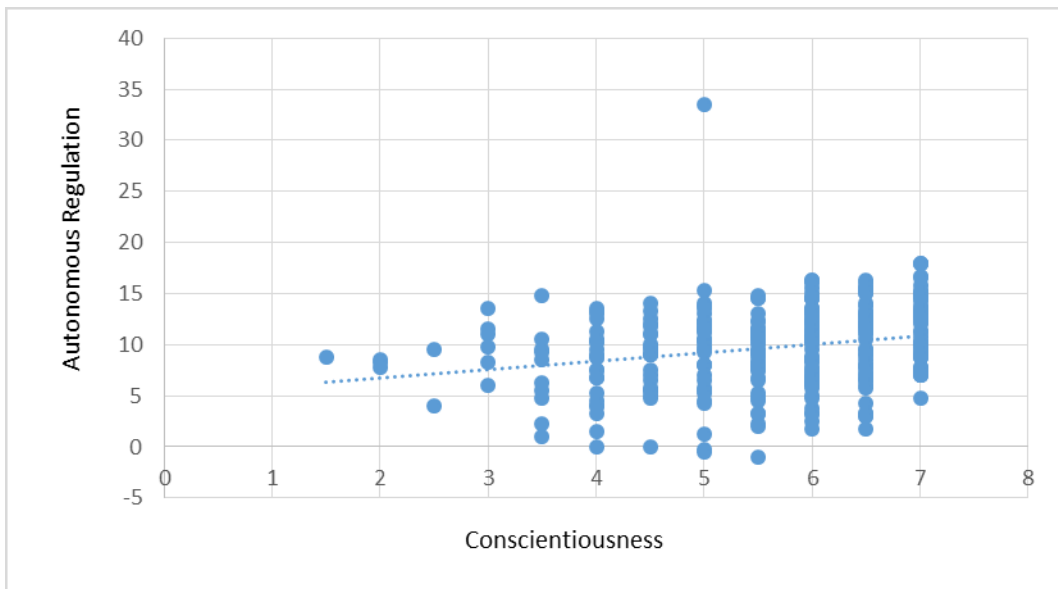


FIGURE 2. Scatterplot correlation between conscientiousness personality trait and autonomous regulation.

## CHAPTER 5

### DISCUSSION

In the current study, it was found the personality traits extraversion, agreeableness, conscientiousness, and emotional stability were positively associated with intrinsic motivation. This result suggests that people who hold these personality traits have their own relational and personal reasons for physical activity. In essence, having a connection to relational and personal reasons for physical activity will provide a person with intrinsic motivation.

This is consistent with research from Duncan et al. (2010) who found positive motivational consequences associated with persistence in physical activity in those who have intrinsic motivation. They also found identified regulation was the strongest predictor of exercise frequency, which is consistent with the current study. Teixeira et al. (2012) found intrinsic motivation was predictive of long-term exercise adherence. In relation to extraversion and conscientiousness, Rhodes (2006) found that these personality traits had a positive relationship with physical activity. Rhodes (2006) also found people who scored lower in neuroticism, which would be those with emotional stability, are likely to engage in physical activity.

Extrinsic motivation is an important piece of the puzzle as well. Mullan and Markland (1997) found that, although extrinsic motivation alone cannot sustain a long-term engagement in regular physical activity, it often is the change catalyst during the initial stages of exercise. Edmunds et al. (2006) found when it comes to regulation of physical activity, exercise outcomes (which would be extrinsic motivators) may initially be more important than the fun and

enjoyment of the activity (which would be intrinsic motivators). This would be consistent with results of the current study. Examples of exercise outcomes could include learning a new skill, meeting new people, or physical improvement of the body.

The current study found the personality trait openness to experience was negatively associated with intrinsic motivation. Those who are open to experiences tend to be creative, curious, imaginative, and more introverted. Introverts usually tend to have less energy and need more extrinsic motivation to participate in physical activity. Teixeira et al. (2012) found consistent results when they found that identified regulation, an autonomous form of extrinsic motivation, was more predictive than intrinsic motivation of initial and short-term adoption of physical activity.

The past research cited is consistent with the current research. All Big Five personality traits had an effect on participating in and adherence to physical activity. There is not a correct or incorrect place on the self-determination theory continuum that will prove whether or not a person will be successful in leading a healthy, physically active lifestyle. Instead, it is more of a way to predict what may work best in beginning and adhering to physical activity for the short and long-term. Both types of motivation are important for different reasons that are equally important for a healthy lifestyle. It is clear from current and past research that extrinsic motivation would benefit the adoption of a new activity and intrinsic motivation would benefit the consistency and adherence to the activity.

This study adds to the existing literature in two ways. First, there was a well-balanced sample distribution among males and females. Studies frequently have a 1:2 male to female ratio, which makes the results heavily skewed toward one gender. Even though the gender demographic was not central to the hypothesis, it is better to have a fair representation of the

population. Second, it explores the association between motivation and all of the 'Big Five' personality traits. Other studies have not presented the same package of surveys to test the hypothesis of the association between personality traits and physical activity motivation.

## REFERENCES

1. American College of Sports Medicine. (2000). *ACSM's guidelines for exercise testing and prescription* (6<sup>th</sup> Ed.). Media, PA: Williams & Wilkins.
2. Annesi, J. (2010). Relationship of physical activity and weight loss in women with Class II and Class III obesity: Mediation of exercise-induced changes in tension and depression. *International Journal of Clinical and Health Psychology*, 10, 435-444.
3. Bales, R. (1970). *Personality and interpersonal behavior*.
4. Burgos-Garrido, E., Gurpegui, M., & Jurado, D. (2011). Personality traits and adherence to physical activity in patients attending a primary health centre. *International Journal of Clinical and Health Psychology*, 11, 539-547.
5. Burisch, M. (1984). You don't always get what you pay for: Measuring depression with short and simple versus long and sophisticated scales. *Journal of Research in Personality*, 18, 81-98.
6. Davies, C., Mummery, W., & Steele, R. (2010). The relationship between personality, theory of planned behaviour and physical activity in individuals with type II diabetes. *British Journal of Sports Medicine*, 979-984.
7. Deci, E., & Ryan, R. (2004). "Exercise self-regulation questionnaires." *Self-determination theory: An approach to human motivation and personality —The self-regulation questionnaires*.
8. Duncan, L., Hall, C., Wilson, P., & Jenny, O. (2010). Exercise motivation: A cross-sectional analysis examining its Relationships with frequency, intensity, and duration of exercise. *International Journal of Behavioral Nutrition and Physical Activity*, 7-7.
9. Edmunds, J., Ntomanis, N., & Duda, J. (2006). A test of self-determination theory in the exercise domain. *Journal of Applied Social Psychology*, 36, 2240-2265.
10. Gosling, S., Renfro, P., & Swann, W. (2003). A very brief measure of the big five personality domains. *Journal of Research in Personality*, 37, 504-528.
11. Mullan, E., & Markland, D. (1997). Variations in self-determination across the stages of change for exercise in adults. *Motivation and Emotion*, 21, 349-362.



12. Prochaska, J., & DiClemente. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, 51, 390-395.
13. Rhodes, R. (2006). The built-in environment: The role of personality and physical activity. *Exercise and Sport Sciences*, 34, 83.
14. Rhodes, R., & Smith, N. (2006). Personality correlates of physical activity: A review and meta-analysis. *British Journal of Sports Medicine*, 40, 958-965.
15. Robins, R., Hendin, H., & Trzesniewski, K. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem scale. *Personality and Social Psychology Bulletin*, 27, 151–161.
16. Ryan, R., & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55:68-78.
17. Ryan, R., Patrick, H., Deci, E., & Williams, G. (2008). Facilitating health behavior change and its maintenance: Interventions based on self-determination theory. *The European Health Psychologist*, 10.
18. Schroeder, S. (2007). We can do better – Improving the health of the American people. *New England Journal of Medicine*, 357, 1221-1228.
19. Teixeira, P., Carraca, E., Markland, D., Silva, M., & Ryan, R. (2012). Exercise, physical activity, and self-determination theory: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 9, 78-108.
20. US Department of Health and Human Services. (2008). Physical activity guidelines advisory committee report, 2008. *US Department of Health and Human Services*.
21. Vollrath, M., & Torgersen, S. (2002). Who takes health risks? A probe into eight personality types. *Personality and Individual Differences*, 32,1185-1197.
22. Williams, G., Deci, E., & Ryan, R. (1998). Building health-care partnerships by supporting autonomy: Promoting maintained behavior change and positive health outcomes. *Partnerships in Healthcare: Transforming Relational Process*, 67-87.

23. Wilson, P., & Rodgers, W. (2004). The relationship between perceived autonomy support, exercise regulations and behavioral intentions in women. *Psychology of Sport and Exercise*, 5, 229-242.
24. Zuckerman, M., & Cloninger, C. (1996). Relationships between Cloninger's, Zuckerman's and Eysenck's dimensions of personality. *Personality and Individual Differences*, 21, 283-285.

APPENDIX A:  
Personality Survey

## TEN-ITEM PERSONALITY INVENTORY

### Ten-Item Personality Inventory (TIPI)

**Instructions:** Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

1 = Disagree strongly
2 = Disagree moderately
3 = Disagree a little
4 = Neither agree nor disagree
5 = Agree a little
6 = Agree moderately
7 = Agree strongly

I see myself as:

- |   |                                    |
|---|------------------------------------|
| 1. ____ Extraverted, enthusiastic.        | 6. ____ Reserved, quiet.           |
| 2. ____ Critical, quarrelsome.            | 7. ____ Sympathetic, warm.         |
| 3. ____ Dependable, self-disciplined.     | 8. ____ Disorganized, careless.    |
| 4. ____ Anxious, easily upset.            | 9. ____ Calm, emotionally stable.  |
| 5. ____ Open to new experiences, complex. | 10. ____ Conventional, uncreative. |

Source: Gosling, S., Renfro, P., & Swann, W. (2003). A very brief measure of the big five personality domains. *Journal of Research in Personality*, 37, 504-528.

APPENDIX B:  
Physical Activity Survey

RM 4-FM: MOTIVATION FOR PHYSICAL ACTIVITY SURVEY

**RM 4–FM: Motivation for Physical Activity and Exercise/  
Working Out—Questionnaires\***



**Motivation for Physical Activity\***

People are active regularly for a variety of reasons. Using the rating scale provided below, please indicate how true each of the following reasons is for why you are, or would like to be, active regularly.

<b>Rating Scale</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
	not at all true			somewhat true			very true

I try, or would like to try, to be physically active regularly	Rating
1. because I would feel bad about myself if I did not	
2. because others would be angry at me if I did not	
3. because I enjoy physical activities	
4. because I would feel like a failure if I did not	
5. because I feel as if it's the best way to help myself	
6. because people would think I'm a weak person if I did not	
7. because I feel as if I have no choice about being active; others make me do it	
8. because it is a challenge to accomplish my goal	
9. because I believe physical activity helps me feel better	
10. because it's fun	
11. because I worry that I would get into trouble with others if I did not	
12. because it feels important to me personally to accomplish this goal	
13. because I feel guilty if I am not regularly active	
14. because I want others to acknowledge that I am doing what I have been told I should do	
15. because it is interesting to see my own improvement	
16. because feeling healthier is an important value for me	

Example	
Extrinsically Motivated	Intrinsically Motivated
2	6
6	2
3	7
6	2
3	5
7	1
6	1
2	6
3	6
3	6
6	2
3	5
5	5
6	2
3	6
3	7

External Regulation: Questions 2, 7, 11, 14	
Introjected Regulation: Questions 1, 4, 6, 13	
Identified Regulation: Questions 5, 9, 12, 16	
Intrinsic Motivation: Questions 3, 8, 10, 15	
<b>Relative Autonomy Index</b>	

<b>6.0</b>	<b>1.8</b>
<b>5.0</b>	<b>3.5</b>
<b>3.0</b>	<b>5.8</b>
<b>2.8</b>	<b>6.3</b>
<b>-8.5</b>	<b>11.3</b>

**Autonomy index** indicates the relative impact of intrinsic and extrinsic factors in your motivation to be active.

- Negative numbers reflect that you are extrinsically motivated for change; that is, external factors are important in regulating your behaviour.
- Positive numbers reflect that intrinsic motivation is primarily involved in your behaviour.

Source: Deci, E., & Ryan, R. (2004). "Exercise self-regulation questionnaires." Self-determination theory: An approach to human motivation and personality —The self-regulation questionnaires.