



Bryant University

HONORS THESIS

The Relationship Between Locus of Control and Athletic Performance

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The Relationship Between Locus of Control and Athletic Performance

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Honors Thesis

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ABSTRACT

The purpose of this study was to expand the conversation of locus of control through quantitative research. A hypothetical model was tested to determine if there is a significant relationship between an athlete's locus of control and their athletic performance. Intrinsic and extrinsic motivation were posited as mediators in the relationship. To test the hypothesized model, data was collected for Division 1 athletes ($n=136$). The data was analyzed using Preacher and Hayes (4) macro, with results indicating no significant relationship between locus of control and athletic performance. Intrinsic motivation was found to be a predictor of athletic performance. Limitations, discussion, and future directions are included.

Keywords: locus of control, athletic performance, intrinsic motivation, extrinsic motivation, academics

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INTRODUCTION

There is a variety of research and literature surrounding locus of control, with a majority of this research focusing on locus of control and its relations with academics and working professionals. Unfortunately, locus of control literature does not extend into many other fields. This might be due to the research topic being relatively newer or the complexity of the research. The limited research has resulted in a narrow focus on locus of control but has also resulted in interest to further the application of the concept.

One of the aims of this research study is to expand locus of control literature to cover more topics and relationships. Specifically, I will be exploring the potential relationship between locus of control and athletic performance, while examining intrinsic motivation and extrinsic motivation as mediators in this relationship. By doing this, I hope to extend the conversation on locus of control and its potential contributions to additional fields which have been generally unexplored.

LITERATURE REVIEW

Locus of Control

Locus of control is defined as “a construct that is used to categorize people’s basic motivational orientations and perceptions of how much control they have over the conditions of their lives” (American Psychological Association, n.d.). A person’s locus of control is either internally or externally focused. A person with an internal locus of control behave according to their internal intentions and perceive their outcomes as results of their own actions and abilities. Oppositely, a person with an external locus of control behave according to external circumstances and perceive their outcomes as results of circumstances that are out of their control (American Psychological Association, n.d.).

In a literature review conducted at the University of Missouri-Columbia, found a relationship between academics and locus of control. Findley and Harris conducted qualitative review of existing research to investigate the relationship between locus of control and academic achievement. Through this review, they found that more internal beliefs are associated with greater academic achievement than external beliefs. This relationship was found to be small to

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medium in scale and the relationship is greater in adolescents than in adults or children. Another factor they found to be significant is gender. The relationship between locus of control and academic achievement is more substantial among males than among females. Additionally, there is a stronger relation with standardized achievement than professor grades. This can be attributed to the objectivity of standardized tests (Findley & Harris, 1983). Overall, this qualitative review outlines many key points in the relationship between locus of control and academic achievement.

Another study was conducted by Certel and Kozak (2017). They conducted a study on university athletes in Europe. Some of their findings related to academic procrastination, self-efficacy, gender, and teams. This study found that greater external locus of control leads to greater academic procrastination. In contrast, greater internal locus of control leads to increased self-efficacy (Certel & Kozak, 2017). Self-efficacy refers to “an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments” and a person's “confidence in the ability to exert control over one's own motivation, behavior, and social environment” (Carey & Forsyth, 2009). Also, the study found that male athletes have greater external locus of control and academic procrastination than female athletes. Certel and Kozak further found that athletes with high academic success have better internal locus of control and academic self-efficacy scores. A key aspect of this study is that the sample population is athletes, but it measures academic performance, not athletic performance. Lastly, the study found that athletes on team sports have higher external locus of academic control than individual athletes (Certel & Kozak, 2017). These two studies exemplify many of the studies that already exist on locus of control and therefore provide a baseline for future studies and identify a gap in the literature.

Intrinsic Motivation

The Self-Determination Theory (Deci & Ryan, 2000) distinguishes between the different types of motivation based on the reasons for actions. The two most basic types of motivation are intrinsic and extrinsic motivation. Intrinsic motivation “refers to doing something because it is inherently interesting or enjoyable” (p. 55). In other words, a person who is intrinsically motivated to complete a certain task is motivated by how it will make them feel internally.

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The reward is in the activity itself, not a separate outcome. For example, an athlete that is intrinsically motivated is working towards a feeling of pride and accomplishment.

The most common use for intrinsic motivation is in educational settings. Since this is a natural motivation for personal curiosity and enjoyment, it is a crucial factor in cognitive, social, and physical development. Educators are understanding and exploiting this motivation to increase motivation and enjoyment in educational settings (p. 55-56). Another important aspect of intrinsic motivation is the relationship between the individual and the activity they are participating in (p. 56). Individuals do not experience intrinsic motivation for every task or activity. In relation to this study, intrinsic motivation refers to the athlete's intrinsic motivation to participate in their sport.

There is also significant literature on intrinsic motivation in the workplace. This research generally focuses on the psychological needs of employees and how to best motivate them. In the compliance era, extrinsic rewards were the solution to motivating employees. However, employees became bored and uninterested in their daily routines and the extrinsic rewards are no longer motivating to employees. Instead, employees are looking for the ability to be creative and take control of their work. In his book, *Intrinsic Motivation at Work: Building Energy & Commitment*, Kenneth Thomas explains the shift from extrinsic to intrinsic rewards in the workplace. Thomas explains that employees are more motivated when they are "energized by the work itself and feel passionate about it" (p. 7). Since employees have more control over their work and are energized by their work, the work is more likely to retain their attention. Employees are more productive and have lessened intentions to quit when they are intrinsically motivated (p. 6-7).

Extrinsic Motivation

From the Self-Determination Theory, extrinsic motivation "refers to doing something because it leads to a separable outcome" (Deci & Ryan, 2000, 55). In other words, a person is motivated complete a task because of the external reward they will receive. For example, an athlete that is extrinsically motivated is working towards the praise of their peers and spectators, or the physical trophy they will receive for winning. Based on their research and perspective, Deci and Ryan assert that extrinsic motivation is more complex and difficult to

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understand than intrinsic motivation because it involves participating in activities that are not fundamentally interesting to the participant (Deci & Ryan, 2000, 60).

However, Thomas tries to combat this challenge by explaining that motivation is not an either-or situation (p. 7). In his book, he explains that the relationship is better explained in a background and foreground balance. For example, when an employee is not receiving fair treatment or pay, they look for extrinsic rewards to keep them working, even if the work is initially interesting to them. On the other side, if an employee is not lacking in extrinsic area, their intrinsic motivation is in the foreground (p. 7-8). Finding the balance between extrinsic and intrinsic motivation is crucial for happy and productive employees.

HYPOTHESIS DEVELOPMENT

The main purpose of this study was to establish whether there is a relationship between an athlete's locus of control and their athletic performance. This model was intended to determine if there was a relationship. In addition, this study was also conducted in order to expand the understanding and knowledge of locus of control and how it may affect different areas of study. Therefore, this model was also intended to determine if motivation affected this potential relationship. In order to accommodate the two different types of motivation, intrinsic and extrinsic, each hypothesis in the model that includes motivation is posed twice, once for each type of motivation.

An individual with a higher internal locus of control believes that the outcomes of their activities are a result from their own actions and abilities. And, they complete these activities according to what motivates them. Therefore, I hypothesize:

Hypothesis 1(a): Student athletes with a high internal locus of control will have higher intrinsic athletic motivation.

Hypothesis 1(b): Student athletes with a high internal locus of control will have higher extrinsic athletic motivation.

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An athlete's performance is can generally be attributed to their natural talent and hard work. When considering the literature on motivation in the workplace, employees complete their work based upon the rewards they may receive as a result of their actions, and tend to be more productive, more creative, and take more initiative when they are intrinsically motivated (Thomas, 2000, p. 6-8). To test this literature in athletes, I hypothesize:

Hypothesis 2(a): High intrinsic athletic motivation has a positive influence on athletic performance.

Hypothesis 2(b): High extrinsic athletic motivation has a positive influence on athletic performance.

Since the literature has shown that an internal locus of control and academic performance have a significant positive relationship, I wanted to test if the same relationship could be found with athletic performance. Therefore, I hypothesize:

Hypothesis 3: Student athletes with a high internal locus of control will have greater athletic performance.

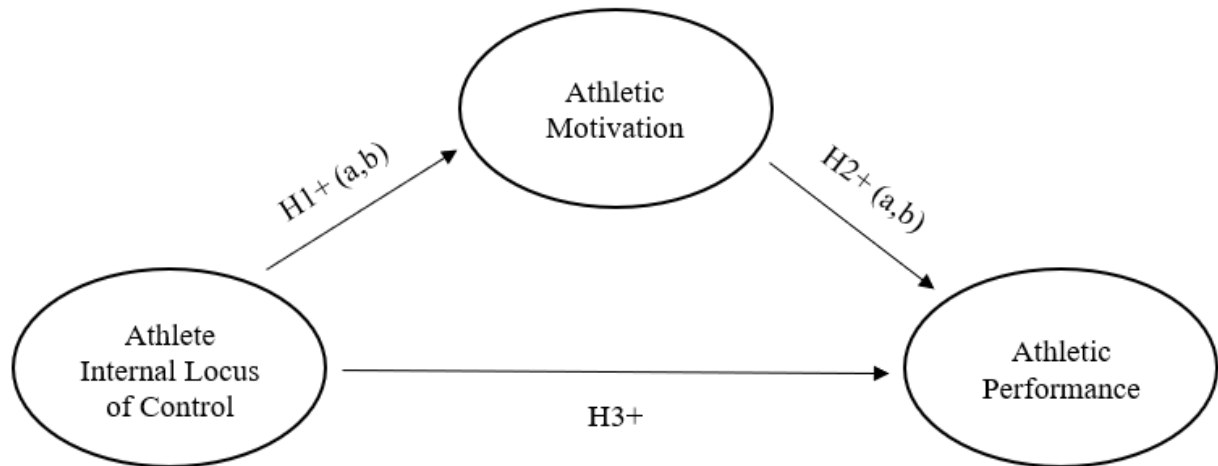
In order to connect all of these hypotheses and to determine if there is a sequential relationship between the factors, I hypothesize:

Hypothesis 4(a) (Mediating Hypothesis): Athlete internal locus of control leads to increased athletic performance through increased intrinsic athletic motivation.

Hypothesis 4(b) (Mediating Hypothesis): Athlete internal locus of control leads to increased athletic performance through increased extrinsic athletic motivation.

A visual representation of my model and hypotheses is found below:

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METHOD

Data Collection

The first piece of the data was collected through a survey. The survey was distributed to coaches of Division 1 athletes from a small private university in the northeastern United States. The coaches selected were from a variety of individual and team sports, as well as, male and female teams. The coaches did not receive any compensation for their participation. The coaches were selected based upon their tenure at the university. Only coaches that had been coaching at the university for at least four years were selected. Additionally, they only filled out surveys for their junior and senior athletes. These two criteria ensured that the coach and athlete had been working together for enough time that the coach was able to provide consistent and accurate ratings of the athletes.

A total of seven teams were surveyed, resulting in 178 total responses. Of those responses, 42 were eliminated for incomplete information. This resulted in a final sample size of 136 ($n=136$). The sample population consisted of 86 male athletes and 50 female athletes.

Once this data was collected, it was paired with student athlete locus of control data. This data is collected from incoming freshmen during their orientation. The scale used is the Trice Academic Locus of Control Scale for College Students. This is a 28-point scale that focuses specifically on college students' locus of control and how involved they become in the pursuit for academic achievement (Curtis & Trice, 2013, 817). A student's locus of control is shown

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on a scale of 0 to 28, with zero being internal locus of control and 28 being external locus of control.

The athlete data was also paired with their gender and academic index. Academic index is calculated during the admissions process. The algorithm considers the student's high school GPA, the rigor of their high school curriculum, and their ACT and/or SAT standardized test scores. Once the surveys were distributed, I did not have contact with the data until it was paired with the locus of control and academic index information and scrubbed of all personal information. This was to maintain the privacy of the athletes and the coaches and to not jeopardize the trust relationship between them.

Measures

All measures were based on a 7-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7) with *neither agree nor disagree* (4) as the neutral midpoint. The full survey can be found in Appendix C.

Individual Performance. I adapted scale items from Dirks & Skarlicki (2009) and Williams & Anderson (1991) to the sports context. Both scales originally focus on employees and their coworkers, so I adapted the items to focus on athletes from the perspective of their coach. I created a three item scale to measure individual performance, which were (1) This athlete fulfills the responsibilities specified in his/her sport position/role; (2) This athlete meets performance expectations; and, (3) This athlete performs the tasks that are expected as part of their position/role performance. Overall, the Cronbach's alpha for these items was 0.94 indicating the scale was reliable.

Intrinsic Motivation. I selected items from Ryan & Connell (1989) and adapted them to the sports context. The Cronbach's alpha for this measure was 0.95 which indicates that the scale is reliable. The three scale items to measure intrinsic motivation were (1) The athlete enjoys the sport itself; (2) The athlete thinks the sport is fun; and, (3) The athlete finds the sport engaging.

Extrinsic Motivation. I adapted 3 items from the Work Preference Inventory (Amabile, Hill, Hennessey, & Tighe, 1994). These items were adapted to address the athlete from the

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perspective of their coach. Overall, the Cronbach’s alpha for these items was 0.75. While this is lower than ideal, it is considered acceptable. The three scale items used to measure extrinsic motivation were (1) The athlete is strongly motivated by the recognition they can earn from other people; (2) The athlete wants other people to find out how good they can be in their sport; and, (3) The athlete wants to feel they are gaining something from their work.

Controls. I tested gender and academic index via simple regression to see if they were significantly related to any of the other variables, as previous research indicated that these factors may be related to the variables. Gender had a significant relationship with both extrinsic motivation and intrinsic motivation. Academic index had a significant positive relationship with intrinsic motivation. As a result, both controls were utilized in the Preacher and Hayes (4) macro.

Data Analysis

The following table displays the descriptive statistics and correlations for the variables.

Variable	M	SD	1	2	3	4	5	6
1. Academic Index	196.51	19.53	-					
2. Extrinsic Motivation	5.80	1.24	0.03	(0.75)				
3. Gender	1.36	0.48	0.20*	-.30**	-			
4. Individual Performance	5.95	1.16	0.16	.31**	-0.04	(0.94)		
5. Intrinsic Motivation	6.06	1.27	0.18*	.50**	-0.19*	0.57**	(0.95)	
6. Student Locus of Control	8.68	3.92	-0.11	-0.13	-0.12	-0.09	-0.12	-

*. Correlation is significant at the 0.05 level (2-tailed).

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

The first step was to conduct simple correlations for each of the variables. Based on this analysis, there are a few preliminary relationships between some of the factors. Extrinsic motivation is found to have a positive relationship with both individual performance and intrinsic motivation. Intrinsic motivation is found to have a positive relationship with individual performance. Also, from this initial correlation analysis, locus of control is not found to have any significant relationships with any of the factors.

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To test the hypothesized model, the Preacher and Hayes (4) method was run two times to account for the intrinsic and extrinsic variations of each hypothesis. This approach to analytical testing is consistent with the recent developments in the statistical methods literature (Hayes, 2009). When processing the regressions, I used the bootstrapping technique, which has shown to be a valid method for testing variable effects (Williams & MacKinnon, 2008). Bootstrapping makes no assumption about the normality of the sampling distribution (Hayes, 2009). I utilized the bootstrapping procedures with 10,000 samples to place a 95% level of confidence for all confidence intervals in output.

RESULTS

The results overall do not indicate support for the model. Specifically, the factors of each hypothesis, except for Hypothesis 2(a), were not found to have significant relationships ($p > 0.1$). The factors of Hypothesis 2(a), intrinsic motivation and athletic performance, were found to have a significant positive relationship ($p < 0.1$). This result support the hypothesis, even though the entire model is not supported. The following table displays the regression results.

<u>Relationship</u>	<u>Supported</u>	<u>Coeff</u>	<u>P-Value</u>
LOC effect on Intrinsic Motivation (H1+(a))	No	-0.02	0.48
LOC effect on Extrinsic Motivation (H1+(b))	No	-0.03	0.17
Intrinsic Motivation effect on Individual Performance (H2+(a))	Yes	0.49	0.00
Extrinsic Motivation effect on Individual Performance (H2+(b))	No	0.07	0.42
<u>Locus of Control Effect on Individual Performance (H3+)</u>	No	0.00	0.99

$N = 136$

DISCUSSION

Although the hypotheses were not supported as expected, this research still provides new insights into the roles of locus of control and motivation. The results indicate that locus of control is not significantly related to athletic performance, directly or mediated through motivation. However, this study does indicate that intrinsic motivation is positively related to

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athletic performance. These results contribute to the argument that locus of control should continue to be researched and the field of knowledge expanded.

The results of the regression analysis indicate that an athlete's locus of control is not significantly related to their athletic performance. This was a surprise to discover since the literature indicates that locus of control does have a significant relationship with academics. Further research should be conducted to confirm this finding and explain this lack of relationship. Should this finding be confirmed by additional research, other studies or literature reviews can be conducted in order to explain any differences between athletics and academics. There could be a fundamental difference that explains why locus of control matters for academic performance but not for athletic performance.

The results also indicate that intrinsic motivation has a positive relationship with athletic performance. Based on the literature, this indicates that the athletes find excitement and passion in participating in their sports and are more willing to work harder for a positive end result. Additionally, even though there are extrinsic rewards for participating in their sports, the athletes find greater motivation in the intrinsic rewards.

One anomaly that can be found in the descriptive correlations is the insignificant relationship between the athletes' locus of control and academic index. The literature specifies that there is a significant positive relationship between an internal locus of control and academic success. However, the relationship between these two factors for this sample population is not significant. Further research could be conducted to explain this anomaly. It could be a specific difference within this sample population. The inconsistency could also be associated with student-athletes compared to non-athletic students. However, this is probably unlikely because the study cited in the literature review consisted of student athletes and found a significant positive relationship between internal locus of control and academic success.

Contributions

Ultimately, the main contributions of this research study are to the overall knowledge of locus of control. I expanded the literature by examining locus of control in relation to athletic performance. Additionally, I contributed to motivation and academics research by including

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them in the hypotheses and using them as controls. Locus of control was not found to predict athletic performance but intrinsic motivation was found predict performance. Also, locus of control was not found to have a relationship with an athlete's academic index. Each of these findings contributes to the overall knowledge areas.

Locus of control was not found to predict athletic performance. The statistical results of the data set do not indicate that there is a significant relationship between an athlete's locus of control and their athletic performance. However, this is different from the literature that already exists surrounding the relationship between locus of control and academic performance.

Intrinsic motivation was found to have a significant positive relationship to athletic performance. This indicates that athletes tend to be motivated by how participating in their sport makes them feel rather than the external rewards that they could potentially gain. In combination with existing literature on athletic motivation, coaches can use this information to better know how to motivate their athletes to perform to higher standards. By understanding the role of motivation, coaches and athletic organizations can create environments that motivate their athletes at a greater capacity.

Limitations and Future Directions

One of the limitations of this study is the locus of control scale that was used to gather information from the incoming freshmen students. The results of this were entered into this study as the locus of control data. The scale used was the Trice Academic Locus of Control Scale for College Students. This is a 28-point scale that focuses specifically on college students' locus of control and how involved they become in the pursuit for academic achievement (Curtis & Trice, 2013, 817). Since the scale is not a commonly used locus of control scale, the results may be slightly different from the common understanding of locus of control and its general impact. The university uses this scale to gather information for internal use only and for their understanding. This is a likely reason as to why they did not necessarily use a common locus of control scale for their research. Additionally, since the scale is focused on college students, it appears to be ideal for university research.

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The survey developed to gather information on the athletes could have created a common method bias effect when the coaches filled it out for each athlete. One way this could have happened was through the actual structure of the survey. The survey had scales for 3 different measurements and each scale was clearly labeled. This allowed the coaches to know what they were measuring in their athletes and could have influenced their ratings. Additionally, extrinsic and intrinsic motivation are both types of motivation so the different could have been unclear to the coaches. Therefore, when filling out the survey, they could have selected the answers they thought were best for each section instead of reading each statement carefully and considering each athlete. This is similar to the other the limitation of the survey, which is each coach filled out multiple surveys. Each coach had to fill out a survey for each of their athletes, which could range from approximately ten to thirty different athletes. With this many surveys to complete, the coaches may have had difficulty thinking about each athlete individually and quickly answered the survey without fully understanding each statement. If this study were to be conducted again, I would suggest restructuring the survey or finding a new way to distribute the survey to ensure clear and reliable data. It is important to point out that the common method bias did not affect the entire process. One way that it was avoided was in the collection of the locus of control data. This data came directly from the student athletes when they entered the university as freshmen. This information is the most important factor of the study and came directly from the students, so it is reliable and accurate.

The information provided by this study could be used to help direct future research on the topics focused on during this research. One of the directions could be to look at the potential relationship between an athlete's locus of control and their academics. Based on the literature, locus of control tends to be a positive predictor of a person's academic achievement. However, there was not a significant relationship between the athletes and their academic success within this sample population. A future study could be conducted in order to determine if this is common in student athletes and why this may be different from non-athlete students.

Another direction could be to compare freshman athletes to senior athletes. Since I focused on junior and senior athletes to analyze, there could be the potential for survivorship bias. These

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athletes had the motivation and determination to remain on their teams during the difficulty of being a Division 1 college athlete. I would attribute this to these athletes having a more internal locus of control. This would skew the data set to being more focused on internal locus of control and limiting the results. A new study that would compare senior athletes to younger athletes might indicate a difference in locus of control and/or motivation. This would assist coaches in further understanding their athletes and broaden the understanding of these knowledge areas.

CONCLUSION

To summarize, it was hypothesized that locus of control would affect an athlete's athletic performance. Additionally, intrinsic motivation and extrinsic motivation were hypothesized to positively mediate this relationship. The results indicated that none of the relationships were significant except the relationship between intrinsic motivation and athletic performance. Additionally, the simple correlation between academic index and locus of control was not consistent with existing literature. Further research should test this model with changes to the data collection. Also, further research could explore how locus of control changes over time or the progression of student athletes and locus of control. There are additional mediating factors that could be explored to assist in this research. Overall, this research contributes to the general literature of locus of control and assists in furthering research.

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APPENDICES

Appendix A – Descriptive Statistics and Correlations

Variable	M	SD	1	2	3	4	5	6
1. Academic Index	196.51	19.53	-					
2. Extrinsic Motivation	5.80	1.24	0.03	(0.75)				
3. Gender	1.36	0.48	0.20*	-.30**	-			
4. Individual Performance	5.95	1.16	0.16	.31**	-0.04	(0.94)		
5. Intrinsic Motivation	6.06	1.27	0.18*	.50**	-0.19*	0.57**	(0.95)	
6. Student Locus of Control	8.68	3.92	-0.11	-0.13	-0.12	-0.09	-0.12	-

*. Correlation is significant at the 0.05 level (2-tailed).

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

Appendix B – Regression Results

Relationship	Supported	Coeff	P-Value
LOC effect on Intrinsic Motivation (H1+(a))	No	-0.02	0.48
LOC effect on Extrinsic Motivation (H1+(b))	No	-0.03	0.17
Intrinsic Motivation effect on Individual Performance (H2+(a))	Yes	0.49	0.00
Extrinsic Motivation effect on Individual Performance (H2+(b))	No	0.07	0.42
Locus of Control Effect on Individual Performance (H3+)	No	0.00	0.99

N = 136

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Appendix C – Athletes Evaluation Survey

Athlete Name: _____

Please evaluate the identified athlete using the following measures.

Using the scale: 1 – strongly disagree, 4 – neither agree nor disagree, 7 – strongly agree

Individual Performance Measure

This athlete fulfills the responsibilities specified in his or sport position/role.

1 2 3 4 5 6 7

This athlete meets performance expectations.

1 2 3 4 5 6 7

This athlete performs the tasks that are expected as part of their position/role performance.

1 2 3 4 5 6 7

Intrinsic Motivation Measure

The athlete enjoys the sport itself.

1 2 3 4 5 6 7

The athlete thinks the sport is fun.

1 2 3 4 5 6 7

The athlete finds the sport engaging.

1 2 3 4 5 6 7

Extrinsic Motivation Measure

The athlete is strongly motivated by the recognition they can earn from other people.

1 2 3 4 5 6 7

The athlete wants other people to find out how good they can be in their sport.

1 2 3 4 5 6 7

The athlete wants to feel they are gaining something from their work.

1 2 3 4 5 6 7

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