

The Relationship Between Future Orientation, Motivational Support, Learning Environment, Technological Accuracy and Learning Outcomes of Players: Evidence from Sports Clubs in China

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Abstract

The objective of this study is to examine the relationship between future orientation, motivational support, learning environment, technological accuracy and learning outcomes. In this direction, the direct effect of future orientation, motivational support and learning environment was examined on learning outcomes of players. The moderating role of technological accuracy was also examined. The primary data were utilized in this study to examine this relationship. Therefore, a survey instrument was used for data collection. Respondents of the study was the players from various sports clubs in China. A statistical tool, namely; Partial Least Square (PLS) was used for data analysis. PLS measurement model and structural model was used in the data analysis process. Results of the data analysis demonstrated that; future orientation has positive effect on learning outcomes of players. Motivational support also has positive effect on learning outcomes. Similarly, technological orientation also has positive effect on learning outcomes. However, learning environment has no effect on learning outcomes. Finally, this study has important insights for the sports club management to enhance the players learning.

Keywords: Future orientation, motivational support, learning environment, technological accuracy, learning outcomes, sports clubs.

1. Introduction

In the recent era, the sports are increasing worldwide having significant representation among various countries. Various games such as football, cricket, wallyball, basketball, table Tanis etc. are most important among several countries ([Bhatti, Khan, & Bashir, 2020](#); [Stamenov, Krstevski, Novacevska, Dimitrievska, & Todorovski, 2020](#)). These games play a vital role in the popularity of nations. The worldwide competition is held worldwide in which number of nations participate. However, to complete in a worldwide competition, the role of players performance is most significant. Without the high-quality performance of players, the success is not possible in a worldwide competition ([ALSHAWY, Ibrahim, Hussein, & Lahlah, 2019](#)).

The performance of the player in competition is most important which is not possible without the quality learning. To achieve higher performance, the learning has major importance. As sported by previous studies that learning and performance has major relationship with each other's ([Chang, Kao, Hwang, & Lin, 2020](#); [Yang, Chang, Hwang, & Zou, 2020](#)). In this way, the role of various factors which effect on learning outcomes is most important to study. Learning outcome is the most important which has major role to increase or decrease the player performance. A better learning always leads to the better outcomes in shape of player performance. Therefore, this study examined various factors that has relationship with the leaning outcomes of players.

China is one of the counties which focused on various

games. Various players from China participate in worldwide competition. However, the performance of Chinese players is not much influential as compared to the other countries. The low performance of Chinese players in various competition is effect by the learning of players at domestic level ([Xavier, Rodrigues, Santos, Lacerda, & Kanaan, 2019](#)). The domestic level performance of players is majorly based on the various sports clubs. Sports clubs generally produce various players which perform at worldwide level. However, the performance of sports clubs is much influential. That is the reason the plyers cannot performance better in most of the competitions due to low performance of sports clubs. Thus, it is needed to enhance the learning outcomes which may lead to the higher player performance at any level. As the sports clubs are most important for players ([da Silva, dos Santos, da Silveira, & Mourao, 2020](#)), therefore, sports clubs in China should enhance the learning outcomes of players.

According to the current study, future orientation of the players is most important. It has important role in learning outcomes. Along with future orientation, the motivation also has effect on learning outcomes. A motivated player generally learns more as compared to the player which is not motivated. Therefore, motivational support has important role to play. As stated in previous studies, motivation and performance has strong relationship ([Karami, Dolatabadi, & Rajaeepour, 2013](#)). Similarly, the role of learning environment in the sports clubs is also most important which lead to the better learning outcomes. Therefore,

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this study introduced future orientation, motivational support and learning environment which has influence on pleyers learning outcomes. Additionally, the current study introduced technological accuracy. In the current era, the sports are quite advance among various countries. The high-quality technology is introduced in various sports which provides maximum accuracy in learning as well as to take various decisions. Therefore, sports clubs in China should also introduce latest technology which may has important effect of learning outcomes of players. Therefore, the objective of this study is to examine the relationship between future orientation, motivational support, learning environment, technological accuracy and learning outcomes. Number of previous studies have worked on sports players (Patel et al., 2020; Wedding, Woods, Sinclair, Gomez, & Leicht, 2020), however, in very rare case any researcher documented the learning outcomes of players. Furthermore, previous studies have not examined the future orientation, motivational support and learning environment in relation to the sports. Therefore, this study has vital importance for the literature in relation to fill the important literature gap. This study also introduced technological accuracy between future orientation, motivational support, learning environment and learning outcomes of players. Technological accuracy is not addressed by the previous studies. Number of previous studies on sports and players performance has not discussed the role of technology in player learning. Hence, this study filled the important literature gap (Sreeraj & Arya, 2021).

2. Hypotheses Development

Learning outcomes are statements of the knowledge, skills as well as abilities individual students should own and can demonstrate upon completion of a learning experience or sequence

of learning experiences. Learning outcomes has major importance to the players. In various sports clubs, players are the student trained by the trainers. The training of players should have sufficient capability to produce good players which are based on the learning outcomes. It is important for a team performance because learning outcomes has direct relationship with the performance. The positive relationship between learning outcomes and performance is already addressed by the previous studies in the literature (Huizenga, Admiraal, Ten Dam, & Voogt, 2019; Tallir, Lenoir, Valcke, & Musch, 2007). Better learning outcomes has the ability to enhance the higher player performance. To get success in a worldwide competition, the higher performance of all the players is most important in which learning outcomes are key. The learning outcomes can be sported with the help of various factors. For instance, future orientation of the player has vital role in this matter. It could be one of the positive factors to enhance learning outcomes of a player. Moreover, motivation also produce positive outcomes. Sports from the colleagues and trainer could also be vital to enhance learning outcomes. In a similar way, the role of learning environment is most important to study as promoting factor for players' learning outcome (Acrux, Athanazio, Gaudêncio, & Rocha, 2020). Along with this, technological accuracy is another important element which has positive influence. Therefore, according to the current study, future orientation, motivational support, learning environment and technological accuracy has important role to play in relation to the learning outcomes of sports players among the China sports clubs. Figure 1 shows the theoretical framework of the study in which the relationship between future orientation, motivational support, learning environment, technological accuracy and learning outcomes is highlighted (Yao & Kang, 2020).

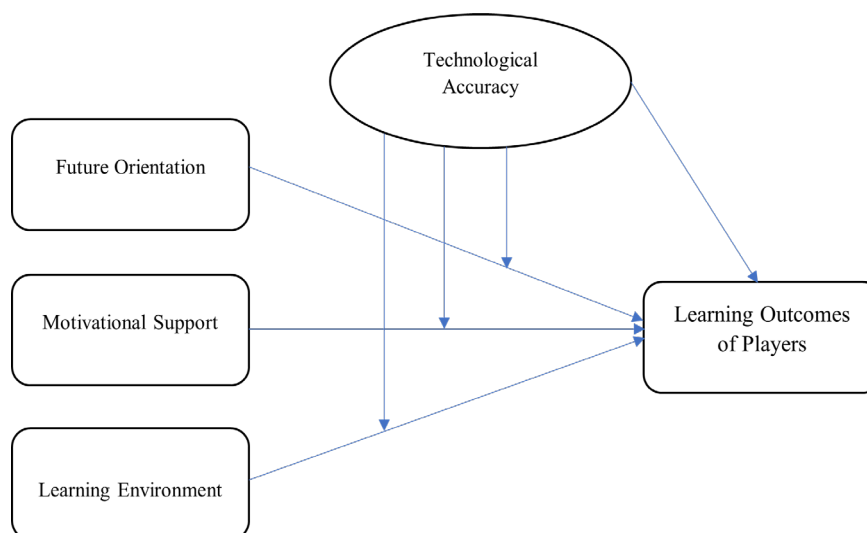


Figure 1. Theoretical framework of the study showing the relationship between future orientation, motivational support, learning environment, technological accuracy and learning outcomes of players.

2.1 Future Orientation and Learning Outcomes of Players

Future orientation is one of the most important factors which has influence on learning outcomes of the players. In psychology and related fields, future orientation is broadly defined as the extent to which an individual think about the future, anticipates future consequences, and plans ahead before acting. The expectations of the future also influence the learning outcomes. If a player has important goals to achieve in the future, he or she will work hard which will effect on the learning outcomes. It is one of the individual factor effects on the learning outcomes. Several previous studies examined the role of future orientation and proved that it is one of the important individual factors ([Oshri, Duprey, Kogan, Carlson, & Liu, 2018](#); [Petrich & Sullivan, 2020](#)). Therefore, the future orientation of player has significant role in learning outcomes among the China sports clubs.

Hypothesis 1. Future orientation has relationship with learning outcomes of players.

2.2 Motivational Support and Learning Outcomes of Players

Motivation is one of the most important force which has vital role to play among people. It has the ability to enhance the positive behavior of the people. In a similar fashion, it also effects on the sport's players. Motivation is the word resulting from the word 'motive' which means wants, desires or drives within the individuals. It is the procedure of inspiring people to actions to achieve the goals. In the work goal context, various psychological factors exciting the people's behavior can be - desire for money. According to the previous studies, motivation has an important relationship with learning of people ([Chung & Leung, 2016](#); [Tseng, Yi, & Yeh, 2019](#)). Similarly, in players learning, the role of motivational support has vital role to play. Better motivational support from the people has major importance for learning outcomes of the players.

Hypothesis 2. Motivational support has relationship with learning outcomes of players.

2.3 Learning Environment and Learning Outcomes of Players

In addition to the various other factors, the role of learning environment is quite important. The term learning environment can denote to an educational approach, cultural context, or physical setting in which teaching, and learning occur. A better learning environment has potential to promote learning of sports players. According to the previous investigations, learning environment has major relationship with the learning of individuals ([Nuninger, Picardi, Goy, & Petrone, 2019](#); [Sangperm & Jermittiparsert, 2019](#)). A friendly environment for learning always shows positive role to promote

learning.

Hypothesis 3. Learning environment has relationship with learning outcomes of players.

2.4 Technological Accuracy and Learning Outcomes of Players

In the current era of technology, the need of technology is most important among the various activities. Higher technology is introduced among various activities which lead to the higher performance. In the sports, various technologies are introduced to get better results. Technology is most important in both learning process and to take various decisions in sports. Several studies has carried out on technological accuracy ([Kasjanov & Safarov, 2018](#)), however, it is not addressed in relation to the players learning outcomes. The introduction of higher technology among the sport's clubs may increase the learning outcomes of players. In the recent decade, higher technology is introduced among the various sports games ([Schneider & Kortuem, 2001](#)), therefore, China sports clubs should also introduce higher technology. Learning outcomes and technology has important relationship with each other's as given in the literature ([Muis, Ranellucci, Trevors, & Duffy, 2015](#); [Shi, Yang, MacLeod, Zhang, & Yang, 2020](#)). In the current study, technological accuracy playing a moderating role. Therefore, the following hypotheses are proposed based on the moderating role of technological accuracy;

Hypothesis 4. Technological accuracy has relationship with learning outcomes of players.

Hypothesis 5. Technological accuracy moderates the relationship between future orientation and learning outcomes of players.

Hypothesis 6. Technological accuracy moderates the relationship between motivational support and learning outcomes of players.

Hypothesis 7. Technological accuracy moderates the relationship between learning environment and learning outcomes of players.

3. Method

To achieve the objective of any research study, the explanation of complete procedure adopted is most important. Therefore, the procedure to examine the relationship between future orientation, motivational support, learning environment, technological accuracy and learning outcomes is addressed in this section. To assess this relationship, the current study adopted quantitative research techniques by using a survey question for data collection. Seven hypotheses were proposed by using the previous studies. These hypotheses were tested with the help of statistical software by using the primary data.

To test the hypotheses, data were gathered by using a survey questionnaire ([Bowling, Bond, Jenkinson, & Lamping, 1999](#)). Survey questionnaire is most important instrument to collect the firsthand data.

Therefore, data were collected from the various individuals. The unit of analysis is individual. Sports clubs from China were selected to collect data and questionnaires were distributed among the players of various games. Total 300 questionnaires were used in this survey to collect data related to the future orientation, motivational support, learning environment, technological accuracy and learning outcomes. From these questionnaires, the current study received 190 valid responses which were used for data analysis. This study used Likert scale for data collection which is suitable to record the opinion and views of the individuals. Additionally, this study used

cluster sampling which is most suitable in the current situation. It is recommended that cluster sampling is suitable to cover the wide spread population ([Boni, 2020](#); [Hameed, Nisar, Abbas, Waqas, & Meo, 2019](#))

4. Findings

To remove the errors in the data, this study examined data statistics as shown in **Table 1**. It shows that data is free from any error. The errors may include; missing value and outliers ([Aydin & SENOĞLU, 2018](#)). Both errors have the possibility to change the results.

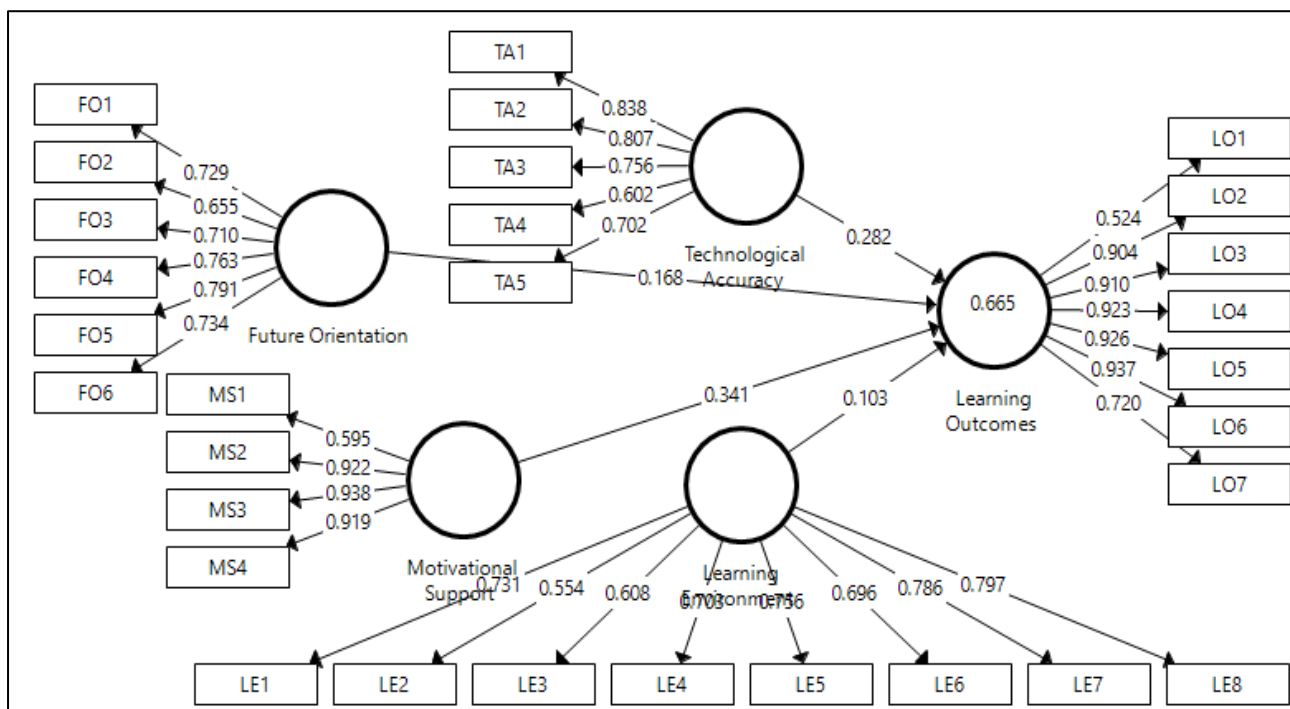
Table 1. Data Statistics

	No.	Missing	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
FO1	1	0	4.097	4	1	5	0.945	1.169	-1.119
FO2	2	0	3.978	4	1	5	1.077	0.263	-0.971
FO3	3	0	3.882	4	1	5	1.12	-0.005	-0.852
FO4	4	0	4.199	4	1	5	0.932	1.66	-1.291
FO5	5	0	4.247	4	1	5	0.799	0.992	-0.988
FO6	6	0	4.124	4	1	5	0.979	0.668	-1.084
MS1	7	0	4.113	4	1	5	1.059	0.499	-1.104
MS2	8	0	3.914	4	1	5	1.099	0.04	-0.857
MS3	9	0	3.962	4	1	5	1.133	0.036	-0.91
MS4	10	0	4	4	1	5	1.122	0.071	-0.945
LE1	11	0	3.952	4	1	5	1.089	0.281	-0.911
LE2	12	0	4.075	4	1	5	0.806	1.515	-0.945
LE3	13	0	4.086	4	1	5	1.002	-0.273	-0.789
LE4	14	0	4.177	4	1	5	0.925	0.084	-0.854
LE5	15	0	4.097	4	1	5	0.94	-0.267	-0.744
LE6	16	0	4.124	4	1	5	0.945	0.719	-1.021
LE7	17	0	3.871	4	1	5	1.013	0.44	-0.864
LE8	18	0	3.962	4	1	5	1.007	0.635	-1.006
TA1	19	0	3.962	4	1	5	1.054	0.045	-0.896
TA2	20	0	3.968	4	1	5	1.116	0.172	-0.988
TA3	21	0	4.027	4	1	5	1.034	1.164	-1.172
TA4	22	0	3.898	4	1	5	1.014	-0.24	-0.668
TA5	23	0	3.914	4	1	5	0.882	-0.398	-0.4
LO1	24	0	3.957	4	1	5	0.891	0.017	-0.559
LO2	25	0	4.038	5	1	5	1.17	-0.09	-0.987
LO3	26	0	4.043	5	1	5	1.145	-0.16	-0.931
LO4	27	0	4.145	5	1	5	1.07	0.835	-1.195
LO5	28	0	4.129	5	1	5	1.109	0.145	-1.068
LO6	29	0	4.129	5	1	5	1.152	0.24	-1.127
LO7	30	0	3.575	4	1	5	1.226	-0.723	-0.502

Note: FO = Future Orientation; MS = Motivational Support; LE = Learning Environment; TA = Technological Accuracy; LO = Learning Outcomes

This study further proceeded to examine the composite reliability (CR). For this purpose, this study tested the factor loadings which must be above 0.5 ([Hameed, Basheer, Iqbal, Anwar, & Ahmad, 2018](#)). To achieve this, this study examined that future orientation is measured by using six items and all the items have factor loadings above 0.5. Four items were used to measured motivational support and found that all the items have above 0.5. Learning environment is measured with the help of eight items and found that none of the item have factor loading below 0.5. Technological accuracy is measured by using five scale

items and learning outcomes is measured by using seven scale items having factor loadings above 0.5. Thus, CR is achieved for all the variables because the value of CR is above 0.7 for all variables as given in **Table 3**. Furthermore, this study also examined external consistency with the help of average variance extracted (AVE) ([F. Hair Jr, Sarstedt, Hopkins, & G. Kuppelwieser, 2014](#); [J. F. Hair, 2010](#); [J. F. Hair, Ringle, & Sarstedt, 2013](#); [Hair Jr, Hult, Ringle, & Sarstedt, 2016](#)). It is found that; future orientation, motivational support, learning environment, technological accuracy and learning outcomes have AVE above 0.5. AVE is also given in **Figure 4**.



Note: FO = Future Orientation; MS = Motivational Support; LE = Learning Environment; TA = Technological Accuracy; LO = Learning Outcomes

Figure 3. Measurement Model

Table 3. Reliability and Convergent Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Future Orientation	0.827	0.838	0.873	0.535
Learning Environment	0.859	0.88	0.888	0.502
Learning Outcomes	0.928	0.936	0.945	0.718
Motivational support	0.867	0.895	0.914	0.732
Technological Accuracy	0.799	0.82	0.861	0.556

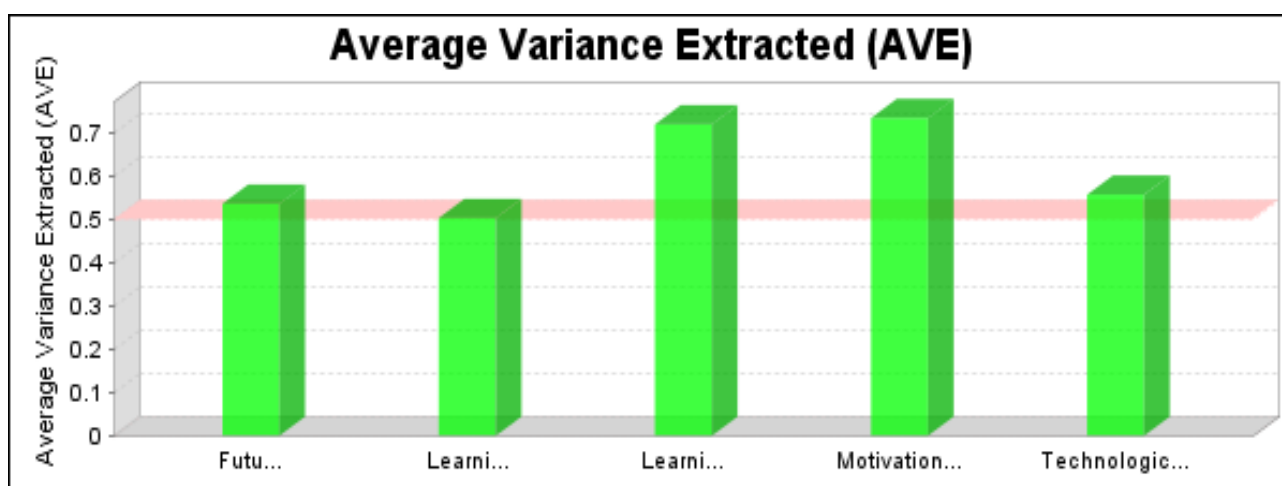


Figure 4. Average Variance Extracted (AVE)

In addition to the CR and AVE, this study examined discriminant validity by using the method of cross-loadings. To examine the relationship between variables; discriminant must be achieved

(Albassami, Hameed, Naveed, & Moshfegyan, 2019; Henseler, Ringle, & Sarstedt, 2015). As shown in Table 4, the discriminant validity is achieved with the help of cross-loadings.

Table 4. Cross-Loadings

	Future Orientation	Learning Environment	Learning Outcomes	Motivational support	Technological Accuracy
FO1	0.759	0.615	0.46	0.465	0.729
FO2	0.655	0.497	0.435	0.438	0.521
FO3	0.751	0.695	0.712	0.634	0.609
FO4	0.763	0.639	0.49	0.492	0.555
FO5	0.791	0.684	0.538	0.446	0.55
FO6	0.734	0.604	0.501	0.484	0.499
LE1	0.642	0.731	0.623	0.664	0.639
LE2	0.49	0.554	0.301	0.456	0.47
LE3	0.531	0.608	0.38	0.398	0.379
LE4	0.599	0.703	0.437	0.443	0.432
LE5	0.719	0.756	0.554	0.488	0.519
LE6	0.696	0.697	0.465	0.471	0.507
LE7	0.617	0.786	0.685	0.66	0.768
LE8	0.612	0.827	0.67	0.666	0.806
LO1	0.495	0.498	0.624	0.382	0.638
LO2	0.68	0.705	0.904	0.687	0.594
LO3	0.68	0.683	0.91	0.674	0.591
LO4	0.634	0.684	0.923	0.628	0.63
LO5	0.65	0.664	0.926	0.718	0.616
LO6	0.639	0.669	0.937	0.667	0.627
LO7	0.553	0.55	0.72	0.608	0.682
MS1	0.661	0.586	0.491	0.795	0.463
MS2	0.668	0.724	0.692	0.922	0.637
MS3	0.641	0.73	0.694	0.938	0.64
MS4	0.622	0.721	0.655	0.919	0.616
TA1	0.619	0.78	0.673	0.674	0.838
TA2	0.673	0.766	0.599	0.608	0.807
TA3	0.699	0.628	0.509	0.534	0.756
TA4	0.423	0.336	0.406	0.321	0.602
TA5	0.515	0.48	0.52	0.38	0.702

Note: FO = Future Orientation; MS = Motivational Support; LE = Learning Environment; TA = Technological Accuracy; LO = Learning Outcomes

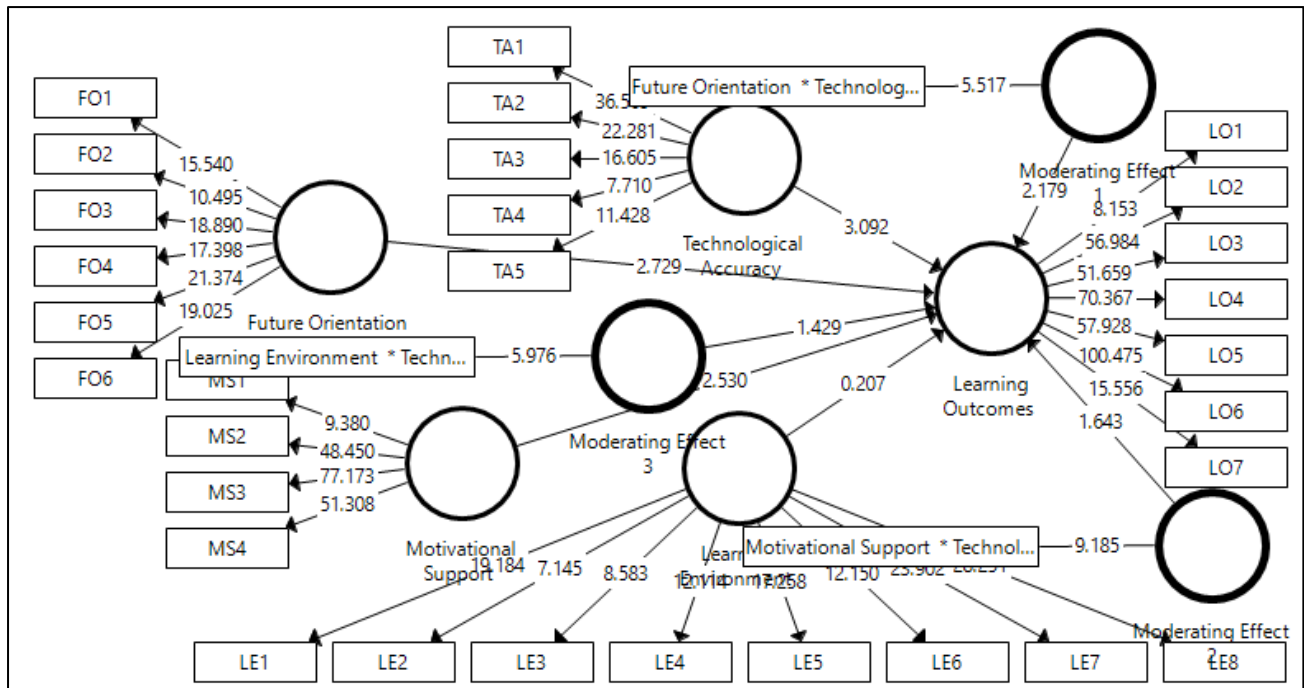
Results of the study was drawn by using PLS structural model as recommended by several studies ([J. Hair, Hollingsworth, Randolph, & Chong, 2017](#); [J. F. Hair, 2010](#); [J. F. Hair et al., 2013](#); [J. F. Hair, Sarstedt, Pieper, & Ringle, 2012](#); [Hair Jr et al., 2016](#)) which is given in Figure 5. In this step of data analysis, the direct effect of future orientation was examined on learning outcomes. The direct effect of motivational support was examined on learning outcomes. Additionally, the direct effect of learning environment was also examined on learning outcomes. Results are given in [Table 5](#) which shows that future orientation has positive effect on learning outcomes as the t-value is 1.644 along with the positive beta value. Motivational support has positive effect on learning outcome with t-value 3.744 with positive beta value. However, learning environment has no effect on learning outcomes because, t-value is below 1.64. Technological accuracy also has positive effect on learning outcomes.

The variables studied were future orientation, motivational support, and learning environment. The results are presented in Table 5. Here's a summary of the findings:

Future Orientation: The analysis indicates that future orientation has a positive effect on learning outcomes. This is evident from the positive beta value and a t-value of 1.644. The t-value suggests that the relationship is statistically significant, although the effect might not be very strong.

Motivational Support: The analysis shows that motivational support has a positive effect on learning outcomes. The positive beta value and a higher t-value of 3.744 both indicate that this relationship is not only statistically significant but also relatively strong.

Learning Environment: The data analysis indicates that learning environment does not have a significant effect on learning outcomes. This conclusion is drawn based on the t-value being below 1.64, suggesting that the relationship is not statistically significant.



Note: FO = Future Orientation; MS = Motivational support; LE = Learning Environment; TA = Technological Accuracy; LO = Learning Outcomes

Figure 6. Moderation

5. Conclusion

The current study is based on the sports clubs in China in which the learning outcomes of players was focused. Various factors effecting learning outcomes of players was examined. Therefore, the objective of this study is to examine the relationship between future orientation, motivational support, learning environment, technological accuracy and learning outcomes. This study used technological accuracy as moderating variable. Thus, the firsthand data was collected from the sports clubs of China and analyzed with the help of statistical tool. Finally, seven proposed hypotheses with the help of literature were assessed through primary data collected from sports clubs of China.

According to the results of the study; future orientation has positive effect on learning outcomes of players. It shows that; increase in future orientation increases the learning outcomes. Therefore, the players must have high expectation in future to achieve the certain goals which will help to learn. Motivational support also has positive effect on learning outcomes. Motivation has greatest power to enhance the learning capability. Increase in the motivation sports to the players may lead to the higher learning outcomes. Similarly, technological orientation also has positive effect on learning outcomes. In the current era of technology, most of the games are heavily based on the latest technology. Therefore, technological accuracy is most important to assess the performance as well as various decisions. Increase in the level of technological accuracy increases the learning outcomes of players.

Hence, technological accuracy has pivotal role to play among the games. In this direction, this study found that; future orientation, motivational support, learning environment and technological accuracy has positive effect on learning outcomes of players of various games. This relationship has the ability to enhance the learning of players which enhance the performance.

6. Implications of the Study

This study is most important to the literature as well as literature related to the sports and players learning. Because the current study has contributed to the literature by examining the relationship between future orientation, motivational support, learning environment, technological accuracy and learning outcomes. This relationship was not addressed by the previous studies. Additionally, this is most important study which has reported technological accuracy in relation to the learning outcomes of the players which is not addressed by the previous studies. This contribution has major important for the future studies to contributed to the literature. Furthermore, this study reported important results which are most important to the practitioners. This study assessed that future orientation has important role in learning outcomes of players, therefore, players must have better future orientation to learn more. This study also reported that motivational support is important for learning. In this direction, managers as well as coaches should sports the players and motivate them to learn for better future. In addition to this, as this study shows that technological accuracy has important role for learning

outcomes, therefore, in sports clubs of China, the latest technology should be introduced to teach the players.

Thus, the current study has important insights for the practitioners.

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