How Organizational Behavior, Artificial Intelligence, and Marketing Techniques in Sports Clubs influence New Product Development

Kuo, Yen-Ku[1], Shen Wei-Ting[2*], Shih Teng-San[3], Dr. Mohammed Hasan Ali Al-Abyadh[4], Edwin Ramirez-Asis[5], Rumi iqbal doewes[6]

Abstract

Development and expansion in any profession are critical in today's advanced world. Individuals associated with the sports industry view sports as a critical component of their lives. Men, in particular, are more interested in sports like football, basketball, cricket, and tennis. Additionally, organizational behaviour refers to an organization's attitude and actions when confronted with various difficulties. Players must be inspired, encouraged, and trained to perform at their best. The first factor contributing to the sports sector's growth is organizational behaviour. Artificial intelligence is the second factor that contributes to the progress of the sports business. Marketing is the third aspect that contributes to the advancement of the sports business. Marketing a product or service enhances both its worth and value. Three independent variables were considered in this paper: organizational behaviour, artificial intelligence, and marketing tactics. On the other hand, New Product Development has been included as a dependent variable. AMOS 26v was used to evaluate the data collected from 30 respondents. Additionally, the findings demonstrated a substantial correlation between the factors.

Keyboard: New Product Development, Artificial Intelligence, Marketing Techniques, Sports Industry, Sports Club, Industry Development.

Introduction

In today's growing and advancing world, development and improvement in any field are critical. Anything that can be modernized is critical for overall growth. The introduction of new products to the market contributes to the overall development. Innovation occurs as a result of new products. Innovation is critical to this world's progression and progress, and by introducing new features of innovation and modernizations in various disciplines, we can attain advancement and progress. The introduction of new sports and other industries advances the sports industry.

Any industry can flourish if it advances in all facets of its field via applying diverse approaches and strategies (Vajpayee & Ramachandran, 2019). Sports are a significant part of the lives of many people who like them. Sports of many kinds provide enjoyment for the public. The world's population, particularly the male community, is more interested in football, basketball, cricket, and tennis. However, women are now interested in sports, and many women participate actively. Through their talent, sports enable players to connect with the world. Thus, for the expansion of the sporting world, the development of the sports industry and the development of new sports items is critical (Shah et al., 2020). The three critical factors that contribute to the advancement of the sports sector are explained in detail below.

The first factor affecting the growth of the sports business is organizational behaviour. Organizational behaviour refers to the actions of each individual within the organization. Additionally, organizational behaviour refers to an organization's attitude and conduct when confronted with certain issues. If an industry's general organizational behaviour is positive, it will positively affect the industry. Sports leaders should be developed and handed over to them to promote better organizational behaviour in the sports business. Leaders in sports must motivate and encourage players while training them to achieve at their best. Employees in any business can perform effectively only if their bosses are adept at assigning work to them. Thus, organizational management is just as critical as dealing with organizational behaviour.

[1] Professor of Bachelor Program in Leisure Industry Management, Commercial College, Chinese Culture University, Taipei City, Taiwan. Email ID: ykkuo@g.sce.pccu.edu.tw

[2] PhD student in College of Sports and Recreation, Graduate Institute of Sport, Leisure and Hospitality Management, National Taiwan Normal University, Taiwan. Corresponding email: charles831904@gmail.com

[3] Professor of Department of Applied Mathematics, College of Science, Chinese Culture University, Taipei City, Taiwan. Email ID: sds@faculty.pccu.edu.tw

[4] Associate Professor of Mental Health - College of Education, Prince Sattam bin Abdulaziz University, Alkharj, Saudi Arabia. In addition, College of Education- Thamar University, Thamar, Yemen. Email: m.alabyadh@psau.edu.sa, https://orcid.org/0000-0002-8964-6670

[5] Universidad Nacional Santiago Antunez de Mayolo, Huaraz, Peru. Email ID: ehramireza@unasam.edu.pe

[6] Faculty of Sport, Universitas Sebelas Maret, Jl. Ir. Sutami, 36A, Kentingan, Surakarta, Indonesia. Email ID: king.doewes@staff.uns.ac.id

The environment is another critical aspect in enhancing organizational behaviour. If an industry's or organization's atmosphere or environment is positive, the employees' behaviour will also be positive (Lopes da Costa et al., 2019). Artificial intelligence is the second factor that contributes to the progress of the sports business. Artificial intelligence is the capacity to accomplish any task via the specialized intellect. Artificial intelligence aids the sports business in developing unique programmes and plans for product expansion and development. The growth of science and technology has resulted in a significant increase in the application of artificial intelligence in recent years. Artificial intelligence's exceptional application in the sports business has benefited this industry tremendously. Artificial intelligence provides the sports sector with various approaches, including sports training, coaching, game analytics, and talent identification, the abilities supplied by artificial intelligence aid in managing the sports industry's whole process.

Artificial intelligence aids in the generation of new product concepts. Additionally, artificial intelligence improves players' ability to solve sports-related challenges. Artificial intelligence enables athletes to devise a methodical and workable strategy for resolving sports-related issues (Shrestha et al., 2019). Artificial intelligence also assists the player in the decision-making process, enabling the player to make the correct option at the appropriate time.

Marketing is the third aspect that contributes to the advancement of the sports business. Marketing a product or service enhances both its worth and value. A sound marketing plan can result in improved results. Numerous sports clubs representing various sports brands have been founded in numerous nations worldwide to improve their market worth. Any sports sector can progress in the world by establishing various sports ventures. Any industry's value depends entirely on its marketing; if an industry has an effective marketing plan, no one can stop it from progressing globally. One of the primary goals of sports marketing is to educate sports fans about new developments and advancements in the sport. International marketing is critical for the growth of the sports business on a global scale. Foreign marketing raises awareness of the sports industry among international citizens, hence increasing the industry's value. Marketing for a certain sports industry explains why their approaches and strategies are superior to others, allowing the public to fully grasp that sports business (MILOVIC & VOJVODIC, 2021). Sports marketing also discusses the cost of new sports products, their distribution, advancement, and new arrivals of sportswear. Sports marketing is also used for advertising sports.

An important part of international sports marketing is that all athletes develop a sizable fan base, which they might acquire through the marketing of the sports sector and individual athletes. Thus, sports marketing adds value to both the sport and the sports layer. We can develop the sports sector by better understanding the mechanisms of organizational behaviour, artificial intelligence, and market strategies. The primary cause for the growth of sports in any country on the planet is these three primary factors. The sports industry's entire new product creation and manufacturing process is governed by artificial intelligence, marketing techniques, and organizational behaviour. The sports industry's relevance stems from promoting a healthy lifestyle and encouraging physical activity (Maramganti & Rajyalakshmi, 2019). The sports sector and its goods significantly influence people worldwide since they meet the new demands of a revolutionized world. As a result of the preceding debate, it is apparent that we can improve outcomes by implementing the three major plans in the sports business.

Review of the Literature

Ratten and Jones (2020) asserted that the promotion of new items in sports clubs has increased over time. The essay discusses the impact of artificial intelligence, marketing methods, and organizational behaviour on the development of new sporting goods. It has been asserted that marketing techniques play a critical role in developing new products. Additionally, artificial intelligence systems and organizational behaviour management strategies have a beneficial effect on developing new products. Digital marketing has a significant impact on developing new products in sports clubs. Wang et al. (2021) emphasize the consequences of digital marketing transformation in sports clubs.

How the development of new goods can be accelerated through various marketing tactics was explored, and the relationship between organizational behaviour and new product development was addressed in this research. Apart from this, Dwivedi et al. (2021) discovered that the same benefits apply to the development of new goods in sports clubs and a broad spectrum of intellectual, industrial, and other economic operations. The growth of AI technologies has created enormous new prospects for commercial innovation. The creation of new products is inextricably linked to marketing management strategies, artificial intelligence, and organizational behaviour. Sport sectors have grown substantially in recent years due to technological advancements. Organizational behaviour has a significant impact on new product creation in sports clubs. According to Chmait and Westerbeek (2021), sports products can be

developed through sports sponsorships, advertising, artificial intelligence, and digital marketing. Artificial intelligence may have a huge impact on developing sports items with suitable marketing techniques. Additionally, MILOVIC and VOJVODIC (2021) investigated how organizational behaviour, marketing strategies, and AI artificial intelligence technology influence the development of new products in sports teams. This research gathered data from 121 different sports groups and industries to accomplish this goal.

Numerous models were analyzed. Various sporting clubs have evaluated a huge number of newly developed products. It was discovered that the development of new goods is highly dependent on marketing strategies, product quality, organizational behaviour, technical performance of the product, employment of advanced AI techniques, and the firm's present performance. According to Winfield and Jirotka (2018), the sports industry has grown to be a multibillion-dollar enterprise on a global scale. China and several other emerging countries have placed a premium on sports business for economic development. As a result, marketing management strategies have a large impact on developing new products in sports teams. According to Stone et al. (2020), a new product will be more successful if it meets the demands and requirements of the customers. If new items do not fulfil the requirements and needs of customers, they will not succeed in development. Numerous other elements, such as product pricing, product quality, and demand for new items, all substantially impact the development and success of the new product. At the same time, Galily (2018) found that the availability of mobile and other smart devices and new AI approaches has aided in increasing individual awareness of the uses and benefits of new products, which appears to be beneficial in producing new products related to sports clubs.

The value of any business's development depends entirely on effective marketing tactics; it was determined that with the management of marketing strategies, no one could halt the creation of new products; additionally, AI has boosted the value of product development globally. Stone et al. (2020) asserted that enterprises could educate sports fans about new sports-related products through artificial intelligence and marketing management strategies, which appears to be helpful for the growth of the sports company as a whole. Apart from that, Patel et al. (2020) asserted that AI (Artificial Intelligence) is a broad discipline of cognitive science, neurology, and psychology that has widespread applications in many spheres of life and consequences for marketing and knowledge management. Additionally, digitization, artificial intelligence, database management,

and algorithms all have substantial implications for business and, thus, the future of the modern technological environment. After conducting an analysis, it was determined that the most significant application of advanced technology appears to be in the new goods industry in sports clubs. Thus, Sohn and Kwon (2020) take a closer look at the impact of artificial intelligence, organizational behaviour, and marketing tactics on the development of new products in sports clubs. Additionally, the realm of sports presents numerous substantial hurdles to their organization. Beal et al. (2019) discuss the computational issues machine learning and artificial intelligence face in the sports sector. To do this, many models have been used to explore sports business obstacles and issues and various techniques for overcoming these computation challenges in the sports domain. Kerzel (2021) focuses on several sports domains such as match prediction, product creation, decision making, organizational behaviour, and player desire for new items in sports teams. By elucidating all of these facets of sports, it was also demonstrated how AI, organizational behaviour, and marketing strategies can improve product development, how AI can be used to forecast match results, and how AI can assist sports teams in improving their tactical and strategic decision-making. Additionally, it was discovered that marketing methods, artificial intelligence, and organizational behaviour all have a vital impact in the product creation process. Additionally, it has a huge impact on developing new products in sports teams.

Methodology

The computational impact on the sports domain for the artificial intelligence, marketing techniques, and organizational behavior, different models have been utilized to investigate sports business impact. To better analyze the impact on new product development in sports clubs, this paper has used three independent variables. These variables were ATI (Artificial Intelligence), Marketing Techniques (MKT), and Organizational Behavior (OGB). However, New Product Development (NPD) is a dependent variable. The data was collected from 30 respondents, and the collected data was analyzed using AMOS 26v.
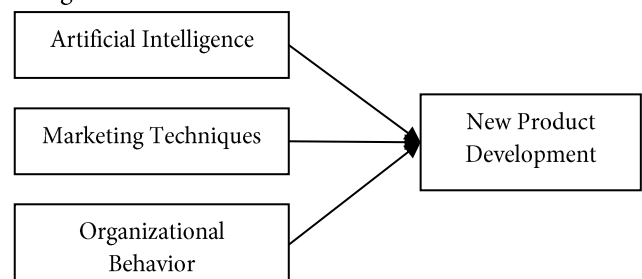
Discussion and Analysis

This section contains the SEM Model (Structure Equation Model) for the study framework. This multivariate technique rigorously investigates, examines, and evaluates the cause-and-effect relationship between variables. This model enables the calculation of direct and indirect effects on pre-defined cause-and-effect relationships based on a set of assumptions. The loadings of variables and items against variables are depicted in the figure below. The mistake phrases are used to minimize the possibility of receiving inaccurate results.

The results from the default model indicate that the values for Chi-square are 42.136, Degrees of freedom; 3, and Probability level = .000.
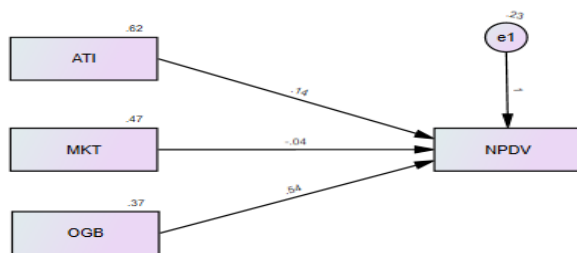
Assessment of Normality

The table below summarises the normality test results for each independent and dependent variable. The output presents the data set's minimum and maximum values and the skew and kurtosis values. As a consequence of the results, it is established that the measuring items for variables have a minimum value of 1.00 and a maximum value of 5.00, and that the values for Skewness and Kurtosis are positive; hence, all items are tailed to the right of symmetry.

Variable	Min	Max	skew	c.r.	kurtosis	c.r.
OGB	1.000	3.667	.474	1.060	.452	.505
MKT	1.000	4.000	.744	1.663	.419	.469
ATI	1.000	4.000	.482	1.077	.155	.174
NPDV	1.000	4.000	.447	1.000	1.007	1.125
Multivariate					3.929	1.553

Regression Weights

The result below illustrates the regression weight of each measurement item below illustrates each measurement item's regression weight concerning ICEPT and SLOPE based on the estimated values used in the calculation. The results indicate that ATI (Artificial Intelligence) and OGB

(Organizational Behavior) are significant. However, the impact of Marketing techniques (MKT) on New Product Development (NPD) is insignificant as the value of p=0.085 (p>0.05).

			Estimate	S.E.	C.R.	P	Label
NPDV	<---	ATI	.144	.113	1.266	.006	par_1
NPDV	<---	MKT	-.036	.130	-.274	.084	par_2
NPDV	<---	OGB	.536	.147	3.650	***	par_3

Standardized Regression Weights

The values for Standardized Regression Weights are displayed in the table above. The estimates for the relationship (cause-and-effect relationship) between the measuring items and the variable are depicted in the following table.

			Estimate
NPDV	<---	ATI	.191
NPDV	<---	MKT	-.041
NPDV	<---	OGB	.550

Variances

Detailed results for ATI (Artificial Intelligence), MKT (Marketing Techniques), and OGB (Organizational Behavior) are presented in the table below. The estimates, confidence intervals, and significant values for each of the three studies are displayed in the table below. The statistically significant ATI, MKT, and OGB are 0.000, 0.000, and 0.000, respectively. Because of this, the amount of information gathered for the variables is significant.

	Estimate	S.E.	C.R.	P	Label
ATI	.623	.164	3.808	***	par_4
MKT	.473	.124	3.808	***	par_5
OGB	.371	.097	3.808	***	par_6
e1	.232	.061	3.808	***	par_7

Bootstrap
Regression Weights

After bootstrapping the data to 500 responses, the result below illustrates each measurement item's regression weight concerning ICEPT and SLOPE based on the estimated values used in the calculation. The relationship between NPDV and ATI estimate value of 0.198 to 0.010, respectively, with a 100 percent significant estimated value at the SLOPE level, was found to be significant.

	Parameter		SE	SE-SE	Mean	Bias	SE-Bias
NPDV	<---	ATI	.198	.010	.126	-.017	.014
NPDV	<---	MKT	.273	.014	-.007	.029	.019
NPDV	<---	OGB	.295	.015	.506	-.031	.021

Minimization History

The minimization history shows the results of alliterations, starting at 0 and the ending level is also at point 0. The results include information on negative eigenvalues, condition values, smallest eigenvalues, diameter rates, and the F-statistic value, as well as the ratio analysis of each iteration. The negative eigenvalues are 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0. Those conditions have 29.467, 17.530, 9.912, 9.479, 9.479,

9.479, and 9.479. Following the results, the f statistic values for each iteration are as follows: 49.548, 46.811, 43.229, 42.258, 42.139, 42.136, and 42.136 for the given six iterations. The result reveals the history of minimization in the form of ratios of 9999.000, 0.754, 0.110, 0.088, 0.044, 0.008, and 0.000, indicating that there is a positive relationship between variables. The values of NTries are 0, 3, 1, 1, 1, 1, and 1. However, the values for Ratios are 9999.000, 0.000, 1.247, 1.187, 1.093, 1.018, and 1.000.

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	0	29.467		9999.000	49.548	0	9999.000
1	0	17.530		.754	46.811	3	.000
2	0	9.912		.110	43.229	1	1.247
3	0	9.479		.088	42.258	1	1.187
4	0	9.479		.044	42.139	1	1.093
5	0	9.479		.008	42.136	1	1.018
6	0	9.479		.000	42.136	1	1.000

Model Fit Summary

CMIN

The below model fit summary includes ATI, MKT, OBG, and NPDV. The model explains the saturation, independence, and default mode. The results for NPAR are 7, 10, and 4, with a value of 3 for each model, according to the results. The CMIN of the default model is 42.136, while the saturated model's CMIN is 0.000, and the independence model's CMIN is 56.633. The result also shows the probability values, which are now 0.000 and 100% significant. According to the model mentioned above, the CMIN/DF rate for the default model is 14.045, whereas the rate for the independence model is 9.439. According to the findings, the CMIN models are appropriate for research and investigation in the disciplines of New Product Development. However, the values for DF are 3, 0, and 6.

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	7	42.136	3	.000	14.045
Saturated model	10	.000	0		
Independence model	4	56.633	6	.000	9.439

Baseline Comparisons

According to this outcome model, the NFI values for each model are 0.256, 1.000, and 0.000, respectively, while the RFI values are -0.488 and 0.000. The TLI and CFI models, which have values of -0.546 and 0.227, respectively, show a negative baseline comparison between variables compared to the default only and a positive baseline comparison in saturated and independence models.

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.256	-.488	.270	-.546	.227
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

The value of Parsimony Adjusted Measures may be found in the table below. This table shows how well the indexes are matched in terms of correlation. The results show that the default model has a PRATIO of 0.500, the Saturated Model has a PRATIO of 0.000, and the Independence Model has a PRATIO of 1.000. When using the default model, the PNFI value is 0.128. When using the saturated model, it is 0.000, and when using the independence model, it is 0.000. The value of PCFI for the default model, on the other hand, is 0.114.

Model	PRATIO	PNFI	PCFI
Default model	.500	.128	.114
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

This result displays the NCP, LO90, and H190 values for each model, as well as a summary of model fitness for each model. An NCP of 39.136 is obtained using the default model; however, a significant ratio of 0.000 is obtained using the saturated model. The default Model is represented by the L090, which has values of 21.758 for the default model, 0.000 for the saturated model, and 30.163 for the Independence Model, respectively. The H190

hypothesis asserts that the 63.953 values in the saturation model of the values model are statistically significant and that the dependent variable of the independence model, which is 78.566, has a positive hypothesis value.

Model	NCP	LO 90	HI 90
Default model	39.136	21.758	63.953
Saturated model	.000	.000	.000
Independence model	50.633	30.163	78.566

FMIN

The default model has a fitness summary FMIN value of 1.453, while the saturated model has a value of 0.000 and the independence model has a value of 1.953. According to the F0 model, the rate levels for each perspective are 1.350, 0.000, and 1.746, respectively. The LO 90 ratios for each model are 0.750, 0.000, and 1.040, respectively, indicating that each variable's model fitness is statistically significant and acceptable. The default model value for HI 90 is 2.205, the saturated model value is 0.000, and the independent model value is 2.709.

Model	FMIN	F0	LO 90	HI 90
Default model	1.453	1.350	.750	2.205
Saturated model	.000	.000	.000	.000
Independence model	1.953	1.746	1.040	2.709

RMSEA

RMSEA results for each model show the default mode and independence model values in the default mode and independence model, respectively. The RMSEA values for the default and independence models are 0.671 and 0.539, respectively, and the LO 90 values for the default and independence models are 0.500 and 0.416. As a consequence of the findings, the positive hypothesis value for HI 90 is 0.857, the positive hypothesis value for the model is 0.388, and the PCLOSE rate for both models is 0.000 and 0.000, indicating that both models are significant.

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.671	.500	.857	.000
Independence model	.539	.416	.672	.000

AIC

The characteristics of NPDV are evaluated using the AIC fit summary, which is linked to ATI, MKT, and OGB. 56.136 is the AIC value for each of the models. When it comes to independence models, the value is 20.0, and when it comes to saturation models, the value is 64.633. According to the findings, the BCC value is proportional to the model's performance. The default model has a value of 59.053; 24.167 points are awarded for the saturated

model, while 66.299 points are awarded for the independence model.

| Model	AIC	BCC	BIC	CAIC
Default model	56.136	59.053	65.945	72.945
Saturated model	20.000	24.167	34.012	44.012
Independence model	64.633	66.299	70.237	74.237

ECVI

As indicated in the table below, the value for ECVI. The ECVI for the Default Model is 1.936, the Saturated Model is 0.690, and the Independence Model is 2.229 for the Independence Model. According to this model's coefficient of determination (LO 90), the saturated model's coefficient of determination (1.336), and the independence model's coefficient of determination (1.523) are all positive. According to the HI 90 Model, a value of 2.791 is acceptable, while the saturation model has 0.690, and the independence model has a value of 3.192.

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.936	1.336	2.791	2.036
Saturated model	.690	.690	.690	.833
Independence model	2.229	1.523	3.192	2.286

HOELTER

The values for the HOELTER Model are listed in the table above. The value for HOELTER.05 for the default model is 6, and the value for the Independence model is 7. Similarly, the value for HOELTER.01 for the Default Model is 8, whereas the number for the Independence Model is 9.

Model	HOELTER .05	HOELTER .01
Default model	6	8
Independence model	7	9
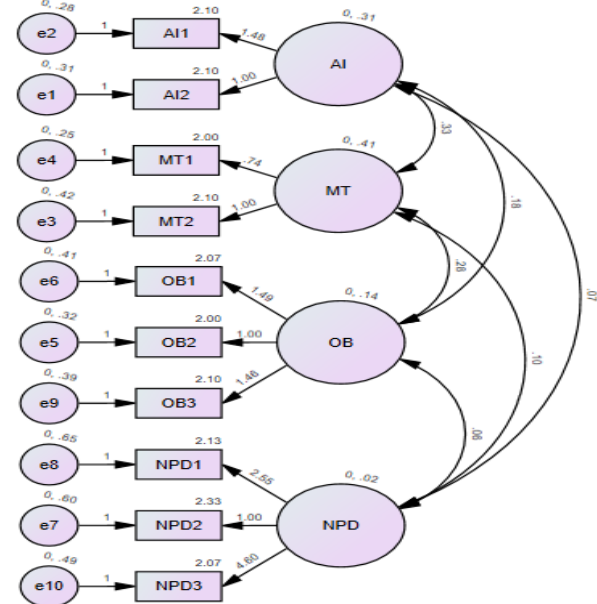
CFA

Using the confirmatory factor analysis test, you can make sure that the factors loading that impacts the variables in the model are correct, and you can detect any challenges or errors in the factors loading between the items and the model fit. Since all of the required values appear in the confirmatory factor analysis result, the values recovered are satisfactory, suggesting that the model is fit and acceptable. This is demonstrated in the figure, which shows the values recovered.

Assessment of normality

Each independent variable's normality test results are shown in the table above, along with the analysis results for each dependent variable. Among the values displayed in the output are the skewness and kurtosis coefficients and the minimum and maximum values. According to the results, the measuring items for variables have a minimum value of 1.00 and a maximum value of 5.00, and the values for Skewness and Kurtosis are both negative and positive; therefore, fewer items are tailed to the left side, and fewer are tailed to the right side of the symmetry.

Variable	Min	max	skew	c.r.	Kurtosis	c.r.
NPD3	1.000	5.000	.984	2.199	1.026	1.147
OB3	1.000	4.000	.161	.359	-.854	-.955
NPD1	1.000	4.000	.315	.705	-.712	-.796
NPD2	1.000	4.000	-.257	-.574	-.742	-.830
OB1	1.000	5.000	1.479	3.308	3.152	3.524
OB2	1.000	4.000	.627	1.403	.980	1.095
MT1	1.000	4.000	.627	1.403	.980	1.095
MT2	1.000	5.000	1.140	2.550	1.784	1.995
AI1	1.000	5.000	1.082	2.418	1.048	1.171
AI2	1.000	4.000	.228	.509	-.552	-.618
Multivariate					6.349	1.122

Correlations

The correlation of estimate is defined as the interaction between covariance, variance, ICEPT mean, and SLOPE 1.000, which indicates a level of significance of 100 percent and inter-correlation of each variable and the correlation of each variable with the other variables. There is a 0.917 correlation coefficient between AI and MT, a 0.869 correlation coefficient between AI and OB, and a 0.992 correlation coefficient between NPD and AI. The findings suggest that there is a strong positive relationship between the dependent and independent variables and between independent variables as well.

			Estimate
AI	<-->	MT	.917
AI	<-->	OB	.869
NPD	<-->	AI	.922
MT	<-->	OB	1.143
NPD	<-->	MT	1.058
NPD	<-->	OB	1.019

Variances

The values of Variance in variables are displayed in the table underneath. The results show a large variation in AI, MT, OB, and NPD. However, OB and NPD show insignificant variation.

	Estimate	S.E.	C.R.	P	Label
AI	.309	.155	1.998	.046	par_23
MT	.408	.204	2.001	.045	par_24
OB	.143	.093	1.533	.125	par_25
NPD	.021	.045	.466	.641	par_26

Factor Score Weights

The factor score weights for each variable are shown in the following table. The variables represent the predicted weight of each item about the factors. These weights range from one-to-one hundred percent. Taking MT→OB3 as an example, it provides the variable with the strongest loadings by supplying it with a 0.221 load against the variable.

	NPD3	OB3	NPD1	NPD2	OB1	OB2	MT1	MT2	AI1	AI2
OB	.060	.036	.025	.011	.035	.030	.175	.141	.053	.032
MT	.123	.221	.051	.022	.213	.181	.021	.017	.134	.082
AI	.064	.038	.027	.011	.037	.031	.077	.062	.260	.159
NPD	.020	.024	.008	.004	.023	.020	.039	.031	.035	.021

Conclusion

Additionally, artificial intelligence (AI) technology and tactics for managing organizational behaviour have a beneficial effect on developing new goods. Digital marketing has had a big impact on how sports organizations generate new products. Artificial intelligence, marketing tactics, and organizational behaviour are all utilized to manage the development and manufacturing of new items and the production of existing

products in the sports business. Additionally, the sports industry's prominence can be linked to promoting a healthy lifestyle and physical activity. Another approach to promoting sports events and products is through sports marketing. Another critical component of international sports marketing is that all athletes have a significant fan following and can develop a sports brand in their speciality fields through the marketing of the sports business and athletes. The first component that contributes to the development of the sports sector is organizational behaviour. Robotics and artificial intelligence (AI) are two more aspects that have aided the development of the sports industry. The third factor that helps the sports company's advancement is advertising and marketing. Marketing any

industry raises both its worth and value. The introduction of new products to the market contributes to the overall growth of a certain field. The introduction of new products results in innovation. Innovation is critical in today's society, and by incorporating new aspects of innovation and modernization into different industries worldwide, we may make tremendous advances forward.

Recommendations

The future recommendations of the study circulate the emerging challenges and opportunities of AI and their impact on the new product development in sports clubs. The study lacked the focus on huge investments requirements and the criticism of sports journalism.

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