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Usage Intention of the Reservation System of Taipei Sports Center from the Perspective of Technology Readiness Index

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Abstract. This study explored the usage intention of the reservation system of Taipei Sports Center from the perspective of Technology Readiness Index. The research subjects were the consumers of the reservation system of Taipei City Sports Center. In the questionnaire distribution part of the study, a total of 350 questionnaires were sent out, and 350 questionnaires were returned. After the invalid questionnaires were deducted, there were 322 valid questionnaires, and the valid questionnaire recovery rate reached 92%. Statistical software SPSS 25.0 and AMOS 25.0 were then used for analysis. The research results are as follows: Hypothesis 1 Optimism had a significant positive influence on usage intention; Hypothesis 2 Innovation had a significant positive influence on usage intention; Hypothesis 3 Inadaptability had a significant negative influence on usage intention; Hypothesis 4 Insecurity had a significant negative influence on usage intention.

Keywords: Reservation System, Technology Readiness Index, Usage Intention.

1. Introduction

According to the Department of Accounting and Statistics of the Executive Yuan in 2023 [1], the annual total salary of the people of Taiwan has been growing year by year, from NTD 470,000 in 2007 to NTD 518,000 in 2022.The Sports Administration, MOE, in order to enhance the national sports culture and improve the lifestyle of the people, has formulated the Reference Guidelines for National Sports Center Planning since 2011 to provide a legal basis for county and municipal governments across Taiwan to effectively subsidize the county and municipal governments to build national sports centers with a

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wide range of sports. However, the traditional way of making reservations at sports centers often has such problems as low efficiency and lack of information transparency, so it cannot meet the needs of modern consumers for convenience and efficiency. Although the reservation system of Taipei Sports Center has been built with an online reservation function, the operation interface of the system is still complicated, which makes it difficult for some consumers, especially the elderly, to familiarize themselves with the use of the system. In addition, the lack of security of the system makes consumers worry about the protection of their personal information. All these problems seriously affect the willingness of consumers to use the reservation system. Therefore, this study focused on how to improve the reservation system to increase consumers' usage intention of the system. so that recreational sports can become a part of people's lives [6].

Similarly, it can be inferred that there has been a drastic change in people's lifestyles, with people increasingly relying on the convenience in life brought by smartphones and apps [34]. During the COVID-19 pandemic, the Taiwanese government severely restricted social distances and places of access, resulting in a dramatic change in people's lifestyles in terms of daily diet, leisure and personal health care, which accelerated the creation of various digitalized products, and an increase in the number of people who pay attention to their own physical and mental well-being [23]. [30] found that the a priori basis for individual cognitive judgments is the use of technology readiness to analyze the propensity of individual traits to use new technologies. Since different consumer characteristics may have an impact on the perception of new technologies, scholars have argued that whether a consumer has adequate technology readiness (TR) will influence the consumer's acceptance of using new technologies. [26] defined technology readiness as "people's habit of accepting and using new technologies to accomplish goals in daily life or work". The Technology Readiness (TR) theory proposed by Parasuraman refers to a psychological state that describes a user's attempts to use a new technology to achieve goals in daily life, learning or work performance. Technology readiness measures the degree to which an individual is receptive to technological information rather than the ability to accept it [8]. While some people have positive feelings of convenience, efficiency and joy in using new technology products or services, others have negative feelings in terms of safety, elimination risk and control, and they even fear technology. [22] pointed out that the use of new technology products or services can result in a psychological conflict between positive and negative feelings of control/chaos, freedom/slavery, novelty/cliché, ability/inability, efficacy/inefficacy, fulfillment of a need/creation of a need, assimilation/segregation, and fascination/unfascination, and their corresponding enablers and inhibitors. Positive enablers refer to consumers' beliefs that the use of new technology products or services can enhance the control, flexibility and efficiency of their daily lives, while negative inhibitors are the negative perceptions of consumers' inability to manage and control the use of new technology products or services [15]. [28] investigated the correlation between consumers' technology readiness in using smartphones and their preference for using business newsletters, which generally refers to the sending of caring, advertising or promotional messages to existing customers to attract new customers. [7] argued in his study that the advantages of efficiency, convenience and usefulness of using a new technology will positively affect consumers' perceived usefulness, which will make consumers have a more positive attitude towards the new technology. [38] investigated the correlation between technology readiness and job satisfaction in a study with the research

subjects of insurance salespersons and customer service workers, and the results showed that optimism and innovativeness in technology readiness were positively related to job satisfaction; on the other hand, inadaptability and security concerns were negatively related to job satisfaction. [37] also concluded in their study that technology readiness had a positive effect on online service quality and online shopping behavior. [27] pointed out that, for consumers who are unable to adapt to new technologies, the innovative technological environment is not very helpful to life.

Technology interacts with and develops along with users' life patterns, and adjusts to changes in the social environment and in response to users' needs, dramatically affecting people's habits of use. Web applications on the Internet have become the indicators of popular applications [13]. In the norm of mutual constraints between providers and consumers coordinated through the reservation-based service system, not only the provider can provide the reservation holders with the protection of their rights and benefits, but also the consumers must follow the agreed time to be present to receive the service [10]. [19] pointed out that the main source of business profits is reflected in the consumer services, consumers can make reservation for services through the Internet system, and they can know the status of the reservation, the reservation time and the number of reservations in real time. In other words, people's daily life has been inseparable from the Internet, and it has become a mainstream that companies must serve consumers through the Internet. With the establishment and help of a web-based reservation system, people can go online to make reservations at any time, regardless of time and place, and know the status quo of the reservation time and the number of people who have made reservations at the same time [14]. The user-friendly interface design can save the user's operation time and improve the user-friendliness, which is a way of great development potential to make reservations in the current environment of Internet penetration [17]. In the past, many scholars discussed the theories related to the usage intention of technology products. [16] found in their research on reservation systems that consumers' use of reservation systems not only reduced on-site waiting time, but also facilitated the exchange of information with operators [11]. [3] argued that the design of the parking reservation system consisted of an Android mobile phone reservation subsystem, a parking management subsystem and a parking ticket recognition subsystem, which not only supported real-time searching of neighboring parking spaces, but also provided parking space reservation services. [31] indicated that the parking space search system can provide drivers with information about the usage status of nearby parking spaces, which greatly reduces the time and money costs compared to the traditional random parking space search method, and is beneficial to the maintenance of traffic order around the parking spaces. [12] designed a school bus reservation system based on the study of the existing school bus schedule and conducted a field study. The results proved that it could save students' transportation costs and improve the safety and convenience of students' rides. [33] showed that an online reservation system can provide better service by reducing operating costs and providing more diversified channels for consumers. However, different users have different usage intentions of the reservation system over time, and the reservation system of Taipei City Sports Center in this study will also change according to consumers' usage patterns and acceptance of technological information. Existing studies have focused on the analysis of a single dimension and neglected the interactions between different dimensions [26]; [12]. Moreover, existing studies rarely focus on the specific area of the reservation systems of sports

centers and lack an in-depth discussion of practical application scenarios [31]. Therefore, this study further explored the effects of optimism, inadaptability, innovation and insecurity on usage intention from the perspective of technology readiness, and made specific suggestions to improve the innovation, usability and security of the system to increase users' usage intention and to improve the overall quality of service. These findings will not only enrich the application of technology readiness theory in specific domains, but also provide new perspectives for the optimization of the reservation system of sports centers.

2. Research Methods

2.1. Research Structure and Hypotheses

1. Research Structure
   Based on the technology readiness theory [26], this paper developed the research structure including the four variables of optimism, innovation, inadaptability and insecurity, as well as their impact on usage intention. Each variable was measured through multiple observation indicators, and the path arrows indicated the causal relationship between the variables, as shown in Figure 1.

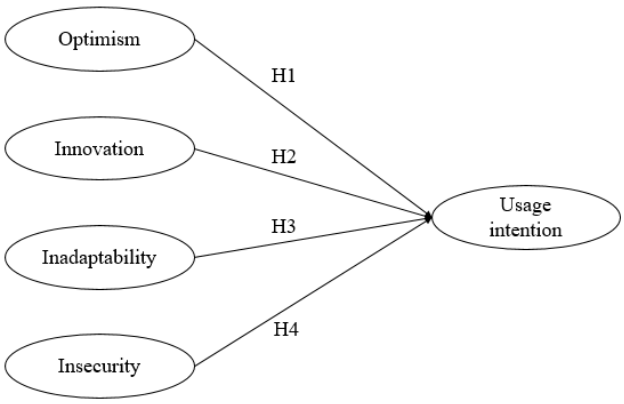

Fig. 1. Research Structure

2. Research Hypotheses
   Based on the previous literature review as well as the purpose and research structure of this study, the following hypotheses were proposed:
   H1: "Optimism" has a significant positive influence on "usage intention".
   H2: "Innovation" has a significant positive influence on "usage intention".
   H3: "Inadaptability" has a significant negative influence on "usage intention".
   H4: "Insecurity" has a significant negative influence on "usage intention".

2.2. Research Subjects and Research Tools

1. Research Subjects
   This study took the consumers using the reservation system of Taipei City Sports Center as the research subjects of this study. The intentional sampling method was adopted to sample a total of 350 consumers of the reservation system of Taipei City Sports Center from December 05, 2023 to December 30, 2023 outside Taipei City Sports Center. During the questionnaire collection process, a total of 350 questionnaires were collected and 322 valid questionnaires were obtained after the invalid questionnaire were deducted, with a valid questionnaire recovery rate of 92
2. Research Tools
   The content of the questionnaire was compiled based on the literature review, including the four scales for optimism, innovation, inadaptability and insecurity. The questionnaire content included basic data, 4 questions in optimism scale, 5 questions in innovation scale, 5 questions in inadaptability scale, 5 questions in insecurity scale, and 3 questions in usage intention scale. The questionnaire was modified from the studies of [26], [25], [4], [36], [35], and [29], respectively, and was measured on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The data were analyzed using SPSS 25.0 for descriptive statistics to understand the basic characteristics of the samples. AMOS 25.0 was used for structural equation modeling to validate the hypotheses and assess the model fit. The AMOS software is effective in building models to validate hypotheses, confirming relationships between observations and latent variables, and it also has the function of handling complex relationships between multiple variables.

3. Research Results

3.1. Descriptive Statistical Analysis

After the samples of the study on the usage intention of the reservation system of Taipei City Sports Center from the perspective of technology readiness were collected, the invalid questionnaires were deleted. Then descriptive statistics were used to analyze and understand the background information of the valid samples, and the analysis of the data of this study was summarized as shown in Table 1.

3.2. Confirmatory Factor Analysis

1. Validation of Convergent Validity
   This study examined the convergent validity of the research dimensions of optimism, innovation, inadaptability, insecurity and usage intention. The results of the analysis showed that the factor loading values of all the dimensions ranged from 0.53 to 0.90, the composite reliability values ranged from 0.82 to 0.92, and the values of average variance extracted ranged from 0.51 to 0.69, indicating that this study had convergent validity [21]. The details are shown in Tables 2 to 6.

Table 1. Summary of Descriptive Statistics of Background Data of Research Samples

Background variables	Classification criteria	Sample size	Percentage %	Cumulative percentage %
Gender	Male	156	48.4%	48.4%
	Female	166	51.6%	100%
Age	20 years old or below	27	8.4%	8.4%
	21-30 years old	110	34.2%	42.5%
	31-40 years old	95	29.5%	72.0%
	41-50 years old	47	14.6%	86.6%
	51-60 years old	31	9.6%	96.3%
	61 years old or above	12	3.7%	100%
Educational level	High (vocational) school or below	114	35.4%	35.4%
	University (junior college)	166	51.6%	87%
	Graduate school (or above)	42	13%	100%
Marital status	unmarried	148	46%	46%
	married	145	45%	91%
	others	29	9.0%	100%

Table 2. Summary of Confirmatory Factory Analysis of Optimism (Source: Compiled by this study)

Estimates of model parameters							Convergent validity		
Latent variable	Observational variable	Unstandardized factor loading	Standard deviation	C.R	p	Factor loading	SMC	Composite reliability	Average variance extracted
Optimism	Optimism 1	1.00				0.68	0.46	0.83	0.51
	Optimism 2	1.14	0.10	12.08	***	0.79	0.62		
	Optimism 3	1.19	0.10	11.50	***	0.79	0.62		
	Optimism 4	1.05	0.10	11.00	***	0.74	0.54		
	Optimism 5	0.76	0.09	8.60	***	0.53	0.28		

Table 3. Summary of Confirmatory Factory Analysis of Innovation (Source: Compiled by this study)

Estimates of model parameters							Convergent validity		
Latent variable	Observational variable	Unstandardized factor loading	Standard deviation	C.R	p	Factor loading	SMC	Composite reliability	Average variance extracted
Innovation	Innovation 1	1.00				0.73	0.53	0.89	0.62
	Innovation 2	1.02	0.08	13.42	***	0.76	0.57		
	Innovation 3	1.14	0.08	14.12	***	0.85	0.72		
	Innovation 4	1.18	0.08	14.08	***	0.83	0.68		
	Innovation 5	0.99	0.08	12.76	***	0.76	0.57		

Table 4. Summary of Confirmatory Factory Analysis of Inadaptability (Source: Compiled by this study

Estimates of model parameters							Convergent validity		
Latent variable	Observational variable	Unstandardized factor loading	Standard deviation	C.R	p	Factor loading	SMC	Composite reliability	Average variance extracted
Inadaptability	Inadaptability 1	1.00				0.50	0.44	0.83	0.51
	Inadaptability 2	0.71	0.07	9.14	***	0.50	0.34		
	Inadaptability 3	1.01	0.08	11.69	***	0.64	0.65		
	Inadaptability 4	0.98	0.08	11.40	***	0.78	0.59		
	Inadaptability 5	0.88	0.08	10.67	***	0.58	0.50		

Table 5. Summary of Confirmatory Factory Analysis of Insecurity (Source: Compiled by this study)

Estimates of model parameters							Convergent validity		
Latent variable	Observational variable	Unstandardized factor loading	Standard deviation	C.R	p	Factor loading	SMC	Composite reliability	Average variance extracted
Insecurity	Insecurity 1	1.00				0.82	0.67	0.92	0.69
	Insecurity 2	1.05	0.05	18.05	***	0.84	0.70		
	Insecurity 3	1.09	0.05	19.41	***	0.90	0.81		
	Insecurity 4	1.05	0.05	19.05	***	0.88	0.77		
	Insecurity 5	0.95	0.06	14.44	***	0.73	0.53		

3.3. Fit Analysis

In the structural model analysis of this study, the indices of chi-square value, chi-square value/degree of freedom (X^2/df), GFI, AGFI, RMSEA, CFI, etc., were used as the fit

Table 6. Summary of Confirmatory Factory Analysis of Usage Intention (Source: Compiled by this study)

Estimates of model parameters							Convergent validity		
Latent variable	Observational variable	Unstandardized factor loading	Standard deviation	C.R	p	Factor loading	SMC	Composite reliability	Average variance extracted
Usage intention	Usage intention 1	1.00				0.84	0.70	0.82	0.61
	Usage intention 2	0.91	0.07	12.52	***	0.77	0.59		
	Usage intention 3	0.82	0.07	12.18	***	0.73	0.53		

indices for the overall model analysis of this study with reference to the research opinions of [2] and [32]. In this study, the corrected ratio of X^2/df was 2.17, which was consistent with the statement of [32] that the smaller the ratio of X^2 to the degree of freedom, the better; [21] stated that the closer the values of GFI and AGFI are to 1, the better, and the corrected ratios of GFI and AGFI in this study were 0.89 and 0.86, respectively. [24] indicated that the best RMSEA value is less than 0.08, and the corrected RMSEA value of this study was 0.06; the best standardized value of CFI is more than 0.90, and the corrected CFI of this study was 0.93. All these showed that the overall model fit of this study was good and the indices met the standard, as shown in Table 7.

Table 7. Overall Model Fit Analysis (Source: Compiled by this study)

Fit indices	Acceptable range	This study model	Model fit judgement
X^2 (Chi-square)	The smaller, the better	477.301	
Ratio of X^2 to degree of freedom	<3	2.17	Good fit
GFI	$>.80$	0.89	Good fit
AGFI	$>.80$	0.86	Good fit
RMSEA	$<.10$	0.06	Good fit
CFI	$>.90$	0.93	Good fit

The empirical results of this study are shown in Table 8. For H1, the path value of optimism on usage intention was 0.69 (p=0.00), H1 was established, that is, the optimism of the users of the reservation system of Taipei City National Sports Center had a significant positive influence on the usage intention of the reservation system. This result of this study is in line with the results of the studies by [25] and [18]. The possible reason is that the consumers of Taipei City Sports Center can make reservations anytime and anywhere through the APP, so that the situation that the facilities and equipment are fully occupied when they arrive at the site can be avoided, thus increasing the usage intention the reserva-

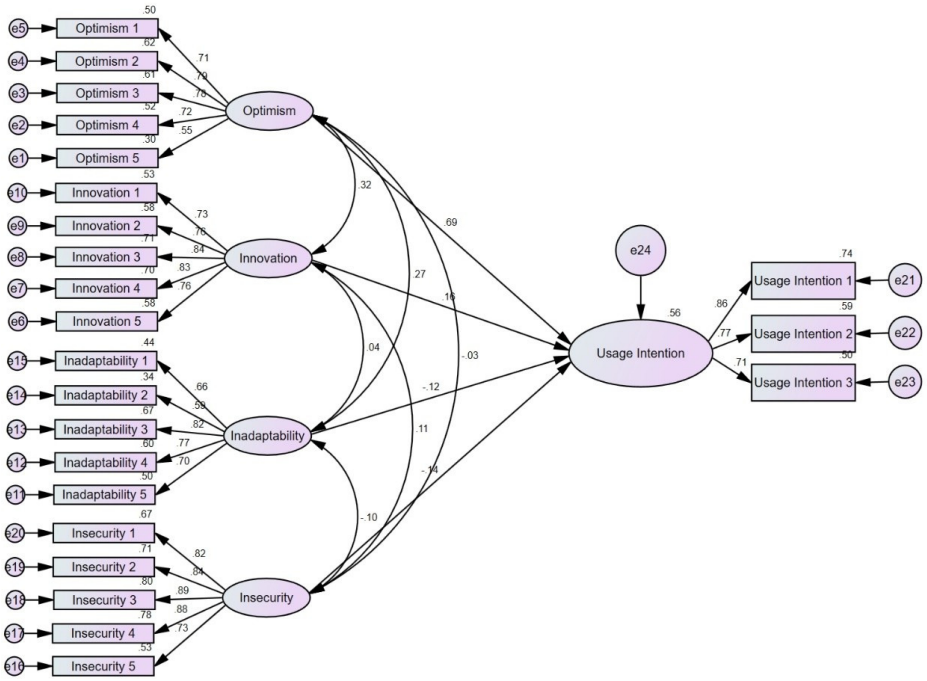

Fig. 2. Study Model Verification Results

Table 8. Empirical Results of Research Hypotheses (* $p < 0.05$,** $p < 0.01$,*** $p < 0.001$)

Hypotheses	Path relationship	Path value	Hypothesis supported or not
1	"Optimism" has a significant positive influence on "usage intention".	0.69***	Supported
2	"Innovation" has a significant positive influence on "usage intention".	0.16***	Supported
3	"Inadaptability" has a significant negative influence on "usage intention".	-0.12**	Supported
4	"Insecurity" has a significant negative influence on "usage intention".	-0.14***	Supported

tion system of Taipei City Sports Center. In Hypothesis 2, the path value of innovation on usage intention was 0.16 (p=0.00), so H2 was established. That is, innovation of the users of the reservation system of Taipei City Sports Center had a significant positive influence on the usage intention of the reservation system. This finding is consistent with the findings of [18] and [20], which may be attributed to the fact that the consumers of Taipei City Sports Center recognized the innovative technology services and conveniences provided

by the reservation system, thus increasing the usage intention of the reservation system of Taipei City Sports Center.

In H3, the path value of inadaptability on usage intention was -0.12 (p=0.02), H3 was established, that is, the inadaptability of the users of the reservation system of Taipei City Sports Center had a significant negative influence on the usage intention of the reservation system. The result is in line with the results of [18] and [20]. There is a possible reason that the users of the reservation system of Taipei City Sports Center learned to adapt to the operation of the reservation system of Taipei City Sports Center and the correctness of the information, which affected the usage intention of the reservation system of Taipei City Sports Center. In H4, the path value of insecurity on the usage intention of the reservation system was - 0.14 (p=0.00), H4 was established, i.e., insecurity of the users of the reservation system of Taipei City Sports Center had a significant negative influence on the usage intention of the reservation system, which is in line with the results of [5] and [9]. It is possible that consumers of Taipei City Sports Center may be concerned about their personal security and privacy when registering for the reservation system, which may affect the usage intention of the reservation system of Taipei City Sports Center.

4. Conclusion and Suggestions

4.1. Conclusion

This study examined the usage intention of the reservation system of Taipei City Sports Center from the perspective of technology readiness, and the results showed that: (1) The path value of optimism on usage intention was 0.69 (p=0.00), so H1 was established. The optimism of the consumers in using the reservation platform of Taipei City Sports Center as examined in this study had a significant positive influence on the usage intention of the reservation system of Taipei City Sports Center. (2) The path value of innovation on usage intention was 0.16(p=0.00), so H2 was established. The innovation of the consumers in using the reservation platform of Taipei City Sports Center as examined in this study had a significant positive influence on the usage intention of the reservation system of Taipei City Sports Center. (3) The path value of inadaptability on usage intention was -0.12(p=0.02), so H3 was established. The inadaptability of the consumers in using the reservation system of Taipei City Sports Center as examined in this study had a significant negative influence on the usage intention. (4) The path value of insecurity on usage intention was -0.14(p=0.00), so H4 was established. The insecurity of the consumers in using the reservation system of Taipei City Sports Center as examined in this study had a significant negative influence on the usage intention. From the theoretical point of view, this study enriched the application of technology readiness theory in a specific domain, and provided a new perspective for understanding the acceptance of technology services by users. From a practical point of view, this study provided specific recommendations for sports center managers to optimize the design of the reservation system, such as improving the system's ease of use, and enhancing data security and privacy protection.

4.2. Suggestions

In recent years, as people pay more attention to health and sports, the demand for the use of sports centers is increasing. However, there are now some problems with the reservation system of Taipei City Sports Center, such as complicated operation, insufficient data

security, and lack of innovation. These problems seriously affect the users' usage intention. In order to address these challenges, this study analyzed the multidimensional user psychological factors such as optimism, innovation, inadaptability and insecurity from the perspective of technology readiness, and proposed novel and specific suggestions for improvement to enhance the service quality and user satisfaction of the reservation system of Taipei City Sports Center.

The results of this study showed that optimism had a significant positive effect on the usage intention of the reservation system of Taipei City Sports Center. Therefore, in order to strengthen the driving force of the positive feelings of the users of the sports center in terms of technology readiness, the sports center industry can use the new technological marketing techniques to market such intelligent technology services as the online venue flow inquiry system and the venue reservation system to the consumers of the sports center, and explain what new benefits and conveniences they can bring to increase the level of optimism of the sports center users towards the intelligent technology services of the sports center. In addition, innovation had a significant positive impact on the usage intention of the reservation system of Taipei City Sports Center. The system manager of the sports center should be able to quickly understand and respond to the market demand, so as to facilitate the introduction of safer, more complete and easy-to-understand technology services and products for the sports center, such as the "AI Intelligent Badminton Court" and "Swimming Pool Drowning Detection System" for consumers to use. This can reduce the powerlessness and fear of sports center consumers to the new technology, make they believe that technology sports venues provide online, intelligent, interactive, immersive and other technology services can bring flexibility, efficiency, safety and convenience to meet their needs, so as to improve the quality of technology services in sports centers.

The results of this study showed that insecurity had a significant negative effect on the usage intention of the reservation system of Taipei City Sports Center. Consumers may have slightly different views on data security and privacy protection of technology services in technological sports centers due to the age difference. Younger consumers may be more skillful in the use of technology, but their concern and alertness to security issues may be relatively low, and they may easily neglect security because of convenience; while older consumers may pay more attention to information security and user interface because they may have suffered from security problems or been cheated in their past life and work experiences, which makes them have a deeper understanding of the security risks of technology services. Therefore, it is suggested that sports center operators should effectively enhance the capacity of their technology service systems to meet security and privacy protection challenges and strengthen the user interface. In this way, they will be able to protect the security and usage of the reservation system and other technology services of the sports center, and maintain the trust and reputation of consumers and the sports center at the same time. In addition, inadaptability had a significant negative impact on the usage intention of the reservation system of Taipei City Sports Center. It is suggested that sports centers should strengthen the instructions for the use of the reservation system in the system. For example, more detailed operating instructions, digital teaching materials or Frequently Asked Questions (FAQ) can be included in the system to help consumers quickly familiarize themselves with the system functions. And the service staff also need to improve the communication and problem-solving explanation and operation

skills, which will enable them to assist consumers more effectively in solving problems encountered in using the new system, so that the consumers of sports centers can quickly adapt to the new technological service system, and the overall quality of service can be improved.

In this study, the confirmatory factor analysis was conducted to examine the convergent validity of the research dimensions of optimism, innovation, inadaptability, insecurity and usage intention. Th correctness and practicability of the analytical model was validated by the structural modeling analysis with such indices as chi-square values, chi-square values/degrees of freedom (X^2/df), GFI, AGFI, RMSEA and CFI in the fit analysis.

References

1. Accounting, Statistics, E.Y.: Statistical results for median annual total salary and distribution of employees in industry and services, 2022. (2003), https://reurl.cc/A286xY
2. Bagozzi, R.P., Yi, Y.: On the evaluation of structural equation models. Journal of the academy of marketing science 16, 74–94 (1988)
3. Chang, C.K.: Design and development of a parking reservation system (2014)
4. Chang, T.H.: The relationship among use intention of credit card and brand image (2021)
5. Chen, S.Y.: An investigation of technology readiness, attitude and behavior intention toward application in community residents (2021)
6. Chou, Y. H., K.C.N.K.C.H.: A comparative study of the effectiveness of government recreation centers and privately owned sports facilities. Journal of Taiwan Society for Sport Management 12(4), 255–284 (Dec 2012)
7. Davis, F.D.: Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS quarterly pp. 319–340 (1989)
8. Erdoğmuş, N., Esen, M.: An investigation of the effects of technology readiness on technology acceptance in e-hrm. Procedia - Social and Behavioral Sciences 24, 487–495 (2011)
9. Fan, S.T.: An empirical study of technology readiness, attitude and behavior intention toward instant messenger in travel agency (2010)
10. Hsu, J.S.: Discussing the influences of factory service appointment system on customer satisfaction: Taking central automobile south taichung plant as an example (2002)
11. Hu, M., Xu, X., Li, X., Che, T.: Managing patients' no-show behaviour to improve the sustainability of hospital appointment systems: Exploring the conscious and unconscious determinants of no-show behaviour. Journal of Cleaner Production 269, 122318 (2020)
12. Huang, H.C.: Research and implementation of a school bus reservation system (2023)
13. Huang, Y.W., Tsai, C.H., Lin, T.P., Huang, S.K., Lee, D., Kuo, S.Y.: A testing framework for web application security assessment. Computer Networks 48(5), 739–761 (2005)
14. Joslyn, J.S.: Healthcare e-commerce: connecting with patients. Journal of Healthcare Information Management 15(1), 73–84 (2001)
15. Ke, C.Y.: A case study of mobile device services for discussing the acceptance of consumers behavior using technical readiness. (2012)
16. Küçük, A., Demirci, M., Kerman, G., Özsoy, V.S.: Evaluating of hospital appointment systems in turkey: Challenges and opportunities. Health Policy and Technology 10(1), 69–74 (2021)
17. Kwak, J.K.: Analysis of the waiting time in clinic registration of patients with appointments and random walk-ins. International Journal of Environmental Research and Public Health 20(3), 2635 (2023)
18. Liu, P.T.: Research on the technology readiness and continuous use intention of elementary school teachers: Taking "classes have internet, students use tablets" as an example (2024)

19. Liu, Y.T.: Design and implementation of adaptive streaming media player based on http live streaming protocol (2012)
20. Lu, Z.F.: Investigating consumers' attitudes and usage intentions towards ar by integrating technological readiness and theory of planned behavior (2024)
21. Mardia, K.V., Kent, J.T., Taylor, C.C.: Multivariate analysis. John Wiley & Sons (2024)
22. Mick, D.G., Fournier, S.: Paradoxes of technology: Consumer cognizance, emotions, and coping strategies. Journal of Consumer research 25(2), 123–143 (1998)
23. Modgil, S., Dwivedi, Y.K., Rana, N.P., Gupta, S., Kamble, S.: Has covid-19 accelerated opportunities for digital entrepreneurship? an indian perspective. Technological Forecasting and Social Change 175, 121415 (2022)
24. Mw, B.: Alternative ways of assessing model fit. Testing structural equation models (1993)
25. Pan, Y.S.: A study on attitude and willingness to use health passbook app based on technology readiness-taking military, public and educational personnel as an example (2024)
26. Parasuraman, A.: Technology readiness index (tri): A multiple-item scale to measure readiness to embrace new technologies. Journal of Service Research 2(4), 307–320 (2000)
27. Park, S.Y., Zhu, K.: Advances in sno2 for efficient and stable n–i–p perovskite solar cells. Advanced materials 34(27), 2110438 (2022)
28. Sophonthummapharn, K., Tesar, G.: Technology readiness and propensity of cell phone users to subscribe to commercial messaging services. Marketing Management Journal 17(2), 81–95 (2007)
29. Sun, S.C.: Integrating technology readiness and post-acceptance model: A case study of mobile service (2010)
30. Walczuch, R., Lemmink, J., Streukens, S.: The effect of service employees' technology readiness on technology acceptance. Information & management 44(2), 206–215 (2007)
31. Wang, C.K.: Smart parking space monitoring and reservation system. department of electrical engineering (2020)
32. Whittaker, T.A., Schumacker, R.E.: A beginner's guide to structural equation modeling. Routledge (2022)
33. Wu, H., Lu, N.: Online written consultation, telephone consultation and offline appointment: an examination of the channel effect in online health communities. International Journal of Medical Informatics 107, 107–119 (2017)
34. Wu, H.C., Huang, W.Y.: A study on using the technology acceptance model to explore the behavioral intentions of consumers using app to watch sports events. Physical Education Journal 53(1), 75–94 (Mar 2020)
35. Wu, T.Y.: Exploring the influential factors of user satisfaction with retailer app from the perspective of information system success model and technology readiness index - a study of convenience store app (2023)
36. Yang, W.H.: The influence of technology readiness and green knowledge on purchase intention in esg environment-a case study of electric vehicle consumers in southern taiwan (2023)
37. Zeithaml, V.A., Parasuraman, A., Malhotra, A.: Service quality delivery through web sites: a critical review of extant knowledge. Journal of the academy of marketing science 30(4), 362–375 (2002)
38. Zhan, W.S.: A study on the impact of boundary spanners' technology readiness on their job satisfactions in the service industry (2002)

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