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**RESEARCH ARTICLE**

## The Adoption of RFID for Military Logistics: Which Factors Do Matter in Taiwan?

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**ABSTRACT**

With the Taiwan Strait war crisis of global concern, this research proposed a conceptual model of RFID adoption based on the TOE framework to explore related factors of intention to use RFID by conducting a quantitative analysis of the ROC's military administration and logistic officers. Based on the results of this study, policymakers must understand the factors of Performance Expectancy (PE), Effort Expectancy (EE) and Information Security (IS) should be given priority, followed by Government Support (GS) and Top Management Support (TMS). These can affect the opinions of the chief executive, rallying their support, thereby effectively promoting new technology policies for ROC's military strategy, thus enhancing combat capabilities.

**KEYWORDS**

UTAUT2, TOE framework, RFID, Military Logistics, Taiwan

**ARTICLE INFORMATION**

**ACCEPTED:** 10 June 2023

**PUBLISHED:** 17 June 2023

**DOI:** 10.32996/jefas.2023.5.3.17

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**1. Introduction**

Wars have shown that whether they are won or lost depends on logistics. Therefore, since 2005, the US Department of Defense has mandated the use of Radio-frequency identification (RFID) for cartons, pallets, and each expensive piece of military equipment, which has made the logistical capabilities of the US military more potent than ever. It can easily receive real-time logistical information and track the whole logistical supply process from factory to soldier.

Over the years, the US military has accumulated a large amount of practical data and experience in logistics support through various military operations and constantly summarizes and reflects on its logistics support operations in order to continuously optimize its global logistics support system (Zhang & Gao, 2023).

However, war can never be fully prepared. There is a growing risk of a military attack on Taiwan by mainland China. The US must increase its military deployments and joint exercises in the region (Diamond & Ellis Jr, 2023). But, the Congress of the U.S. has not yet funded a badly needed air and missile defense system on Guam, which houses an air and naval base that would be on the frontlines of any conflict over Taiwan. And at bases across the region, stockpiles of precision-guided munitions are insufficient to support a prolonged conflict (Gallagher, 2022).

In contrast, the Republic of China (ROC) army uses a variety of weapons and equipment, and the process of the logistical system is complex. Hence, setting up RFID should be a priority to optimize logistics support operations. However, it is limited by the defence department's Information Security (IS) policy, as well as the Cost of Adoption (CA), and has become one of the most important issues in the logistical management of the national army (Hsiao, 2006). On the other hand, the literature in the domestic military domain is only based on the current situation, quality comparisons, and expert interviews. This research intends to contribute the method to the use of quantitative methodologies to fill this research gap.

2. Literature Review

2.1 Military Logistics Innovation and RFID

Casella, Bigliardi, and Bottani(2022) showed a significant number of 129 studies in the last three years(2018-2020) were identified that focused on RFID technology and its use in logistics, involving stakeholders, manufacturers and customers. The military sector, like the corporate world, both prizes and struggles to understand innovation. According to the field investigation of the ROC army, items such as the "Low Fuel Warning Control Box" were not integrated due to the logistical information deployment system (Figure 1). Therefore, importing RFID systems will help improve military logistics (Qiu Chuangjun, & Zhang Yisheng, 2012).

Big Data originates from traditional transactions systems, as well as new sources such as emails, internet activities, social media, sensor recordings and RFID(Zhang, Yang, & Appelbaum, 2015), and investments in technologies, including sensors, RFID, help to remove the human component(Montecchi, Plangger, & Etter, 2019).

The Ministry of National Defense (MND) currently only uses RFID for physical fitness testing, access control, and regulatory projects. However, the dimension in the socio-technical regime lacks empirical analysis. Thus, a research gap needs to be filled(Apanasevic, 2018). To effectively solve problems such as logistics management, it is advisable to better understand the views of the national logistics management personnel on RFID, to analyze their intentions and decision-making, with which they improve military logistics and strengthen their overall combat capabilities.

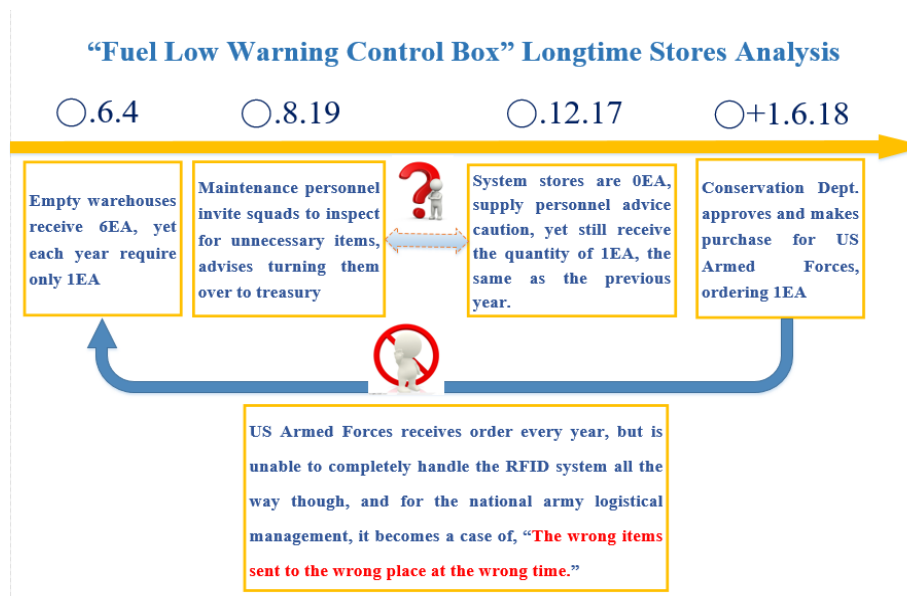


Figure 1 : Longtime Stores of the ROC army

2.2 Technology Acceptance Theory

Venkatesh, Morris, Davis, and Davis (2003) first proposed the Unified Theory of Acceptance and Use of Technology (UTAUT), which is widely used to explore the acceptance of Intention to Use (IU) new technology. On a UTAUT basis, The Extended Unified Theory of Acceptance and Use of Technology(UTAUT2) showed that "Performance Expectancy(PE)" and "Effort Expectancy(EE)" had a significant effect on the adoption of new technologies and introduced three new constructs, namely "hedonic motivation", "price value" and "habit" with a higher explanatory power than UTAUT. UTAUT2 can be further revised or transformed and integrated into future interdisciplinary organizational and regional basic models (Venkatesh, Thong, & Xu, 2016).

This study considered the armies' acceptance of new technology, which is guided by policy and enforced by administrative orders, thereby negating the need to wait until the soldiers develop these habits and decide whether to accept the new technology. Therefore, when referring to the UTAUT2 model, "hedonic motivation" has been factored out and "habit", as well as two more dimensions, have been revised. Moreover, the "Facilitating Conditions" in the UTAUT2 model is the "individual", which differs significantly from the "organizational" and should not be included at the organizational level (Park, 2011). It was excluded as well.

Abbad, Lairer, and Mahjoub(2022) showed that the non-adoption of RFID is mainly explained by the cost of this technology for the actors. Therefore, we retain the "price value" and name it CA.

Logistics is seen as a vital player ready to collect trustworthy and secure real-time data by utilizing extensive interconnectivity (Antouz, Akour, Alshurideh, Alzoubi, & Alquqa, 2023). The introduction of such new technologies as RFID into the military logistics innovation can specifically improve the quality and effectiveness of the national defense administration. However, the UTAUT2 does not include "security" and "risk"; thus, we incorporated them into IS, which has significant effects on the adoption of new technologies by cyber supply chain or e-governance (Fernando et al., 2023; Hasani, Rezania, Levallet, O'Reilly, & Mohammadi, 2023; Khairi, Putrawan, Nugraha, & Ikhwan, 2023).

### 2.3 TOE framework

An exploratory cross-sectional study on 10 employees in the IT industry in the United States pointed out that the factors that should be considered in organizational type are more complicated than the personal attributes considered by models such as UTAUT. The confirmation of models such as UTAUT does not apply to organizations. Type, which concludes that it is more appropriate to integrate the analysis of DOI, TAM (Theory of Technology Acceptance Model), TOE (Technology–Organization–Environment) and other theories and the criteria which are suitable for organizations. The interview results consistently indicated that no matter how useful the innovative technology is, a lack of support from chief executives will hinder the future adoption of new technologies (Olufemi, 2018). At the same time, Top Management Support (TMS) had a significant effect on all aspects (Lee, Russen, Dawson, & Madera, 2023; Li, Yang, Um, & Kang, 2023; Pham & Lo, 2023; Wang & Liu, 2023).

The adoption of RFID is influenced by such factors (TMS, CA) as the leadership of principals in the organization and the cost barrier (Reyes, Li, & Visich, 2016). "Government Support(GS)" affect the adoption of new technology decisions by organizations (Chundakkadan & Sasidharan, 2023; Kurniawan, Maulana, & Iskandar, 2023; Nguyen, Verreynne, Steen, & de Oliveira, 2023; Yu, Wang, Hou, Yu, & Pan, 2023).

In summary and considering the competition and customer pressure of the National Army, mainly from the administrative guidelines, and objectives of the Executive Yuan, the Legislative Yuan, the Supervision Office, and other institutions changing the adoption of new technologies such as RFID and other established policies (habits) needs the support of plans, budget estimates and formalized budgets, the conversion of "habit" into GS, and the inclusion of TMS and CA to complete the model.

## 3. The Research Model

### 3.1 Research Model and Hypotheses

Based on the TOE framework, PE, EE, and IS are "Technology 1", CA is "Technology 2", TMS is an organization, and GS is the environment. The research hypotheses as shown in Table 1. The presented hypotheses were tested using Structural Equation Modeling (SEM).

Table 1: Research Hypotheses

<b>H1: PE, EE and IS (Technology 1) have positive effects on IU.</b>
<b>H2: CA (Technology 2) has a negative affects on IU.</b>
<b>H3: PE, EE and IS (Technology 1) have positive effects on TMS.</b>
<b>H4: CA (Technology 2) has negative effects on TMS.</b>
<b>H5: TMS (Organization) has positive effects on IU.</b>
<b>H6: GS (Environment) has positive effects on TMS.</b>
<b>H7: GS (Environment) has positive effects on IU.</b>

The research model was based on these hypotheses (as shown in Figure 2). The survey operational definitions details are shown in Table 2.

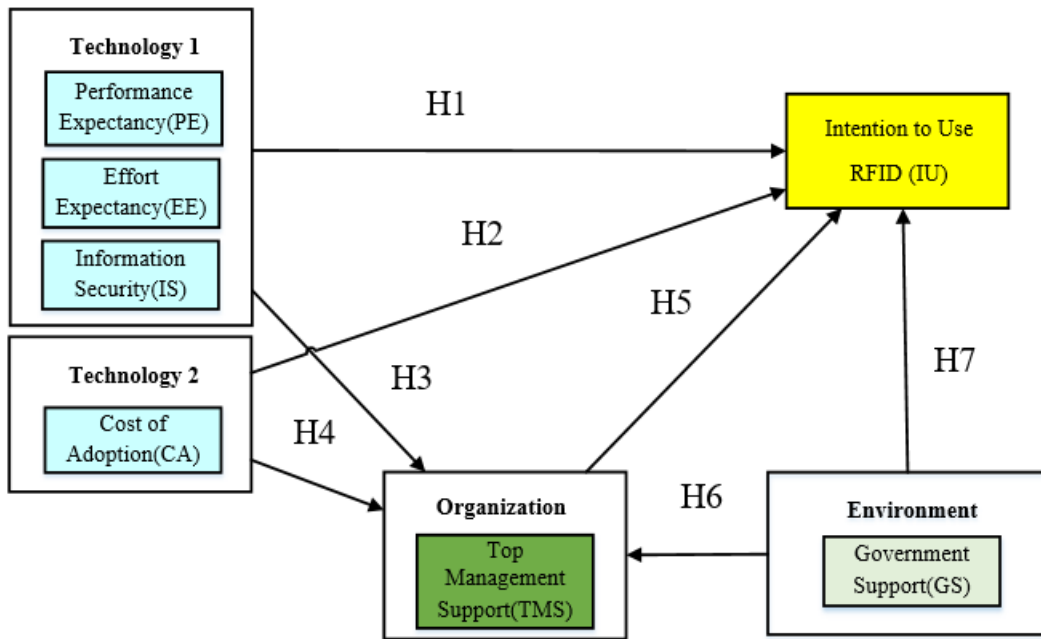


Figure 2 : Research Model

Table 2: Operational Definitions

Construct	Operational Definitions	Item
Performance Expectancy(PE)	Benefits to the army in its use of RFID(makes work easier and more efficient).	1, 2, 3
Effort Expectancy(EE)	Feeling of ease and simplicity for the armed forces to learn and operate RFID.	4, 5, 6
Information Security(IS)	The army feel "secure" in using RFID.	7, 8, 9
Cost of Adoption(CA)	Setting up RFID equipment and network environment, integrating operations, training personnel, and reengineering are cost-effective.	10, 11, 12, 13
Top Management Support(TMS)	RFID can be operated smoothly when established and supported by army commander.	14, 15, 16, 17
Government Support(GS)	Top government agencies such as the Executive Yuan provide guidance and budgeting for the establishment and use of RFID(estimated budgets).	18, 19, 20, 21
Intention to Use(IU)	Intention to use RFID.	22, 23, 24

### 3.2 Sampling Subjects and Methods

The military further education and training greatly by the National Defense University. It screens military officers from different military services and conducts regular training every year, which is representative. Therefore, this study is based on the military formal and postgraduate education instructors and trainees of the National Defense University. It is separated into six categories: human resource, logistics, planning, communications, comptroller and others, utilizing the stratified sampling and convenience sampling methods.

## 4. Empirical Analysis

### 4.1 Pretest

As the items in question were translated from English to Chinese and needed to be consistent with the military terminology, they were reviewed by national logistics experts and instructors on June 2022. After construct and content validities were established, the students were pre-tested in September 2022. A total of 30 pretest questionnaires were issued. All are statistically significant, meaning that there is a degree of discrimination in each item, and they should be retained.

### 4.2 Descriptive Statistics

From February 6 to 17, 2023, a total of 240 questionnaires were issued in the survey, and 231 were recovered (recovery rate = 96.67%); 31 invalid questionnaires were factored out, leaving 201 valid questionnaires. The effective recovery rate was 83.75%. Cronbach's  $\alpha$  value of each construct was between 0.789 and 0.912, greater than 0.7(Nunnally, 1978). As a result, it was regarded as appropriate. It is inconvenient for this study to collect too many personal details. The descriptive statistics of basic personal data as shown in Table 3.

Table 3 : Descriptive Statistics

Variable	Definition	Frequency	Proportion	Variable	Definition	Frequency	Proportion
Sex	Male	178	88.6%	Categories	Human resource	14	7.0%
	Female	23	11.4%		Logistics	65	32.3%
Age	26-30	24	11.9%		Plan	12	6.0%
	31-35	47	23.4%		Communications	46	22.9%
	36-40	85	42.3%		Comptroller	25	12.4%
	Older than 41	40	22.4%		Others	39	19.4%

### 4.3 Confirmatory Factor Analysis

The Marida coefficient of this study is  $125.8285 < 23 \times (23+2) = 575$ . Through multivariate normality testing (Bollen, 1989). The error variance (SE) for all items is  $>0$  and are significant. Standardized Factor Loading (SFL) is between 0.6408 and 0.9489 and does not exceed 1 ( $>0.95$ ) (as shown in Table 4). As a result, it was regarded as appropriate.

Table 4 : Confirmatory Factor Analysis

Variable	Item	Mean (M)	Standard Deviation (SD)	SFL(SE)	CR	AVE
PE	PE1	4.26	0.674	0.8397(0.0197)*	0.807	0.5856
	PE2	4.13	0.760	0.6408(0.0347)*		
	PE3	4.23	0.691	0.8007(0.0217)*		
EE	EE1	3.92	0.766	0.8408(0.0299)*	0.8378	0.633
	EE2	3.87	0.700	0.7598(0.0259)*		
	EE3	3.94	0.766	0.7841(0.0314)*		
IS	SE1	3.33	0.982	0.8507(0.0337)*	0.895	0.7421
	SE2	3.35	1.025	0.9489(0.0369)*		
	SE3	3.29	1.118	0.7379(0.0578)*		
CA	CA1	3.25	0.944	0.709(0.0272)*	0.8082	0.5134
	CA2	2.50	0.932	0.7343(0.0257)*		
	CA3	2.65	0.972	0.6696(0.0324)*		
	CA4	4.31	0.638	0.7506(0.0316)*		
TMS	TMS1	4.16	0.675	0.7714(0.0182)*	0.8853	0.6593
	TMS2	4.10	0.677	0.8191(0.0214)*		
	TMS3	4.16	0.683	0.8719(0.016)*		
	TMS4	4.03	0.655	0.7816(0.026)*		
GS	GS1	4.06	0.740	0.749(0.0237)*	0.882	0.7149

	GS2	4.00	0.677	0.8903(0.0206)*		
	GS3	3.87	0.766	0.8895(0.0208)*		
IU	IU1	4.17	0.767	0.835(0.0192)*	0.8679	0.6871
	IU2	4.28	0.761	0.8751(0.0205)*		
	IU3	4.24	0.811	0.7735(0.0268)*		

Note 1: \*Represents P<0.05

Note 2: The standardized regression coefficients are SFL, which is Standardized Factor Loadings, SE, which is Error Variance, CR, which is Component reliability and AVE, which is Average Variance Extracted.

Table 4 showed the component reliability(CR) of each facet is higher than 0.8, and the AVE is between 0.5134 and 0.7421, both exceeding 0.5. Table 3 shows the square root of AVE is between 0.7165 and 0.8615, which was greater than 0.70 in all cases and greater than the square of the correlations, thus suggesting discriminant validity.

Table 5: Discriminant Validity

	PE	EE	SE	CA	TMS	GS	IU
PE	<b>0.7652</b>						
EE	0.6236	<b>0.7956</b>					
SE	0.1873	0.0215	<b>0.8615</b>				
CA	0.3935	0.0455	0.1740	<b>0.7165</b>			
TMS	0.6031	0.3219	0.2414	0.4222	<b>0.8120</b>		
GS	0.3357	0.1366	0.2333	0.5010	0.5695	<b>0.8455</b>	
IU	0.6066	0.3522	0.2983	0.3180	0.6133	0.5467	<b>0.8289</b>

4.4 Hypothetical Path Testing

After assessing the measurement model, a structural model or path analysis is carried out. The structural model as shown in Figure 3. The hypotheses H1, H3, H5, H6, H7 are accepted(Table 6).

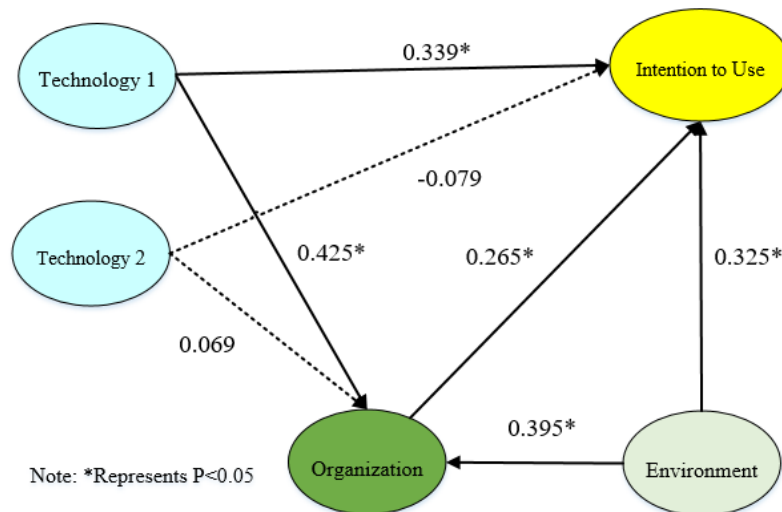


Figure 3 : Path Analysis

Table 6: Path Correlation

Hypotheses	Path	Path Value	Decision
H1	Technology 1→IU	0.339*	<b>Accept</b>
H2	Technology 2→IU	-0.079	
H3	Technology 1→Organization	0.425*	<b>Accept</b>
H4	Technology 2→Organization	0.069	
H5	Organization→IU	0.265*	<b>Accept</b>
H6	Environment→Organization	0.395*	<b>Accept</b>
H7	Environment→IU	0.325*	<b>Accept</b>

Note : \*Represents  $P < 0.05$

The effect of each potential variable, as shown in Table 7, for the IU, the most influential factor is Technology 1, with an overall effect of 0.4516, followed by the environment, with an overall effect of 0.4297, followed by organization, with an overall effect is 0.2650.

Table 7: Overall Model Effects

Path	Direct Effect	Indirect Effect	Overall Effect	Order of priority
Technology 1→IU Technology 1→Organization→IU	0.3390	0.1126	0.4516	<b>1</b>
Organization→IU	0.2650		0.2650	<b>3</b>
Environment→IU Environment→Organization→IU	0.3250	0.1047	0.4297	<b>2</b>

## 5. Conclusions

Drawing on a TOE framework by the introduction of PE, EE, IS, CA, TMS and GS, this study explored the factors that influence military logistics management officers of ROC on their intention to use RFID. The analysis shows that PE, EE, IS, TMS, and GS had significant positive effects on the intention to adopt. This supplements the dimension of technology acceptance theory that is lacking in socio-technical regimes.

In addition, the most important factors of intention to use RFID, it is necessary to consider the technical aspects of PE, EE and IS. Followed by the factors of GS and TMS, such as the guidance and budget provided by MND, Executive Yuan should also pay attention. This can affect the opinions of the unit's chief executives, rallying their support, thereby effectively promoting new science and technology policies and enhancing combat capabilities.

MND is a combat organization and unlike a private company that only seeks to cut costs and increase margins. Its duty is to create, maintain, and support its combative might. In the overall logistical support system, due to the sheer number of tasks required, less consideration is given to manpower and funding constraints. For logistical work such as disaster relief and the opening of camps, the costs involved have not yet been based on the budgetary benefits of the military accounting bulletins that can be allocated to a single department. In terms of "the appropriate amount," low-cost parts and accessories, which have caused hundreds of millions of dollars worth of weapons and equipment to be shut down, pose a risk far more serious than that of any regular company. Therefore, the balance between the tasks and the cost of storage in various units is facing the politics of the ROC in the international weapons and equipment market. In terms of complexity, some of them only understand the task, thinking of "Prepare any more materials than would be necessary to prevent shortages" to reduce the uncertainty of repairs and supplies.

Our suggestion for future research should not only be MND but also focus on the levels of the Executive Yuan so that greater policy effectiveness can be achieved.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

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## References

- [1] Abbad, H., Lairet, G., & Mahjoub, S.(2022). L'adoption de la RFID À L'ère de L'internet Des Objets: Application À la Grande Distribution Alimentaire. *Marché et organisations*(3), 33-47.
- [2] Ahmed, R., & Azmi bin Mohamed, N.(2017). Development and validation of an instrument for multidimensional top management support. *International Journal of Productivity and Performance Management*, 66(7), 873-895.
- [3] Antouz, Y. A., Akour, I. A., Alshurideh, M. T., Alzoubi, H. M., & Alquqa, E. K. (2023). The impact of Internet of Things (IoT) and Logistics Activities on Digital Operations. Paper presented at the 2023 International Conference on Business Analytics for Technology and Security (ICBATS).
- [4] Apanasevic, T. A., Niklas, M, Jan.(2018). Mobile payments: A proposal for a context-oriented approach based on socio-technical theory. *Journal of Innovation Management*, 6(3), 40-97. doi:10.24840/2183-0606\_006-003\_0004
- [5] Casella, G., Bigliardi, B., & Bottani, E.(2022). The evolution of RFID technology in the logistics field: a review. *Procedia Computer Science*, 200, 1582-1592.
- [6] Chandra, S. K., Karippur N (2018). EXPLORING FACTORS INFLUENCING ORGANIZATIONAL ADOPTION OF AUGMENTED REALITY IN E-COMMERCE: EMPIRICAL ANALYSIS USING TECHNOLOGY-ORGANIZATION-ENVIRONMENT MODEL. *Journal of Electronic Commerce Research*, 19(3), 237-265.
- [7] Chundakkadan, R., & Sasidharan, S. (2023). The role of government support on E-commerce and firm innovation during the pandemic crisis. *Economic Analysis and Policy*, 78, 904-913.
- [8] Diamond, L., & Ellis Jr, J. O. (2023). Detering a Chinese military attack on Taiwan. *Bulletin of the Atomic Scientists*, 79(2), 65-71.
- [9] Fernando, Y., Tseng, M.-L., Wahyuni-Td, I. S., de Sousa Jabbour, A. B. L., Chiappetta Jabbour, C. J., & Foropon, C. (2023). Cyber supply chain risk management and performance in industry 4.0 era: information system security practices in Malaysia. *Journal of Industrial and Production Engineering*, 40(2), 102-116.
- [10] Gallagher, M. (2022). Taiwan can't wait. *Foreign Affairs*.
- [11] Hasani, T., Rezania, D., Levallet, N., O'Reilly, N., & Mohammadi, M. (2023). Privacy enhancing technology adoption and its impact on SMEs' performance. *International Journal of Engineering Business Management*, 15, 18479790231172874.
- [12] Karalekas, D. (2022). Taiwan and the Software of War: Learning Resilience from Ukraine. *Contemporary Chinese Political Economy and Strategic Relations*, 8(3), 481-518.
- [13] Khairi, A. S., Putrawan, P., Nugraha, R. K., & Ikhwan, A. (2023). Analysis Of Information Security It Governance With Cobit 5 Framework At PT. Indonesia Comnets Plus (ICON+) SUMBAGUT. *Jurnal Penelitian Dan Pengkajian Ilmiah Eksakta*, 2(1), 17-24.
- [14] Kurniawan, -, Maulana, A., & Iskandar, Y. (2023). The Effect of Technology Adaptation and Government Financial Support on Sustainable Performance of MSMEs during the COVID-19 Pandemic. *Cogent Business & Management*, 10(1), 2177400.
- [15] Lee, M., Russen, M., Dawson, M., & Madera, J. M. (2023). Enhancing Performance and Perceived Justice in Hospitality Organizations: An Integrated Model of Gender Diversity Within Top Management Teams. *Cornell Hospitality Quarterly*, 19389655231164063.
- [16] Li, S., Yang, M., Um, K.-H., & Kang, M. (2023). Top-management environmental support and environmental performance: a moderated-mediation role of supplier environmental management and adaptability. *Total Quality Management & Business Excellence*, 1-17.
- [17] Mohtaramzadeh, M., Ramayah, T., & Jun-Hwa, C.(2018). B2b e-commerce adoption in Iranian manufacturing companies: Analyzing the moderating role of organizational culture. *International Journal of Human-Computer Interaction*, 34(7), 621-639.
- [18] Montecchi, M., Plangger, K., & Etter, M.(2019). It's real, trust me! Establishing supply chain provenance using blockchain. *Business Horizons*, 62(3), 283-293.
- [19] Nguyen, T., Verreyne, M.-L., Steen, J., & de Oliveira, R. T. (2023). Government support versus international knowledge: Investigating innovations from emerging-market small and medium enterprises. *Journal of Business Research*, 154, 113305.
- [20] Olufemi, A.(2018). Considerations for the Adoption of Cloud-based Big Data Analytics in Small Business Enterprises. *Electronic Journal of Information Systems Evaluation*, 21(2), 63-79.
- [21] Pan, M.-J., & Jang, W.-Y.(2008). Determinants of the adoption of enterprise resource planning within the technology-organization-environment framework: Taiwan's communications industry. *Journal of Computer information systems*, 48(3), 94-102.
- [22] Park, S.-h. s. L., Lorraine; Yi, Mun Y.(2011). Group-level effects of facilitating conditions on individual acceptance of information systems. *Information Technology and Management*, 12(4), 315-334. doi:10.1007/s10799-011-0097-2
- [23] Pham, T.-D. T., & Lo, F.-Y. (2023). How does top management team diversity influence firm performance? A causal complexity analysis. *Technological Forecasting and Social Change*, 186, 122162.
- [24] Qiu C, & Zhang Y.(2012). Cost-benefit Analysis of Importing RFID into Military Logistics - Taking an Air Force Air Defense Weapon System as an Example. *Journal of Innovation and Management*, 3(1), 43-61.
- [25] Reyes, P. M., Li, S., & Visich, J. K. (2016). Determinants of RFID adoption stage and perceived benefits. *European Journal of Operational Research*, 254(3), 801-812.
- [26] Venkatesh, V., Thong, J. Y., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, 17(5), 328-376.
- [27] Wang, W., & Liu, C. (2023). Dynamic Capability Theory Based Study on Performance of Intelligent Manufacturing Enterprise under RFID Influence. *Electronics*, 12(6), 1374.
- [28] Xiao Y.(2006). Discussion on Radio Frequency Technology for Military Products. *National Defense Journal*, 21(6), 139-147. doi:10.6326/NDJ.2006.21(6).6
- [29] Yu, H., Wang, J., Hou, J., Yu, B., & Pan, Y. (2023). The effect of economic growth pressure on green technology innovation: Do environmental regulation, government support, and financial development matter? *Journal of Environmental Management*, 330, 117172.
- [30] Zhang, J., Yang, X., & Appelbaum, D.(2015). Toward effective Big Data analysis in continuous auditing. *Accounting Horizons*, 29(2), 469-476.
- [31] Zhang, Y., & Gao, M. (2023). The status, Characteristics and Enlightenment of US Military Food Procurement Support. *Academic Journal of Management and Social Sciences*, 2(1), 152-155.