Procurement Intention to Use by Third Party Logistics (3PL): Conceptual Framework

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ABSTRACT

This study aims to identify the determinants of e-procurement behavior intention by Malaysia's third-party logistics (3PL) industry. E-procurement is a critical component of modern supply chain management, and its adoption by Third Party Logistics (3PL) companies can lead to significant benefits such as cost savings, efficiency improvements, and better supplier relationships. However, the adoption of e-procurement systems by 3PL companies has been slow, and the factors influencing their behavior and intention to use such systems are poorly understood. The study's findings suggest that Smart Contract, Performance Expectancy, Effort Expectancy, Social Influence, and Facilitation Condition are significant predictors of e-procurement behavioral intention by Third Party Logistics (3PL) companies in Malaysia. The results also indicate that Experience and Voluntaries of use partially mediate the e-procurement behavioral intention. The study's contributions include providing insights into the factors that influence the adoption of e-procurement systems by 3PL companies in Malaysia and suggesting strategies for policymakers, managers, and researchers to encourage the adoption of e-procurement systems in the logistics industry. The study findings could be used to inform and improve e-procurement adoption initiatives in Malaysia's logistics industry, ultimately leading to cost savings, efficiency improvements, and better supplier relationships.

Index terms—Third Party Logistic, UTAUT, E Procurement, Framework

INTRODUCTION

E-procurement, which involves the use of electronic systems to streamline the procurement process, has become increasingly popular in recent years. In the logistics industry, e-procurement can offer numerous benefits, such as reducing transaction costs, improving supplier relationships, and enhancing supply chain management (Chopra, S., & Meindl, 2016; Lin, C. Y., Chen, Y. S., & Li, 2018). However, despite these potential benefits, the adoption of e-procurement among third-party logistics (3PL) companies in Malaysia has been slow, and many companies continue to use traditional procurement methods.. To promote the adoption of e-procurement in the 3PL industry in Malaysia, it is essential to understand the factors that influence the behavioral intention of these companies to use e-procurement systems. Several theoretical frameworks have been developed to explain technology adoption, including the Technology Acceptance Model (TAM), the Theory of Reasoned Action (TRA), and the Diffusion of Innovation (DOI) theory. However, these frameworks have been criticized for their limitations in explaining technology adoption in complex organizational contexts (P. Lai, 2017). In response to these limitations, the Unified Theory of Acceptance and Use of Technology (UTAUT) was developed to provide a more comprehensive framework for understanding technology adoption (Venkatesh, V., & Bala, 2008). The UTAUT model proposes that four factors influence technology adoption: performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy refers to the degree to which the technology is perceived to be useful in achieving work goals, while effort expectancy refers to the degree to which the technology is perceived to be easy to use. Social influence refers to the degree to which the opinions of others influence technology. In contrast, facilitating conditions refer to the degree to which the technology is supported by organizational and technical infrastructure. Recent technological advancements have given rise to the use of Smart Contracts in the procurement process. A Smart Contract is a self-executing contract that uses

blockchain technology to automate the execution of a contract without the need for intermediaries. The use of Smart Contracts offers several benefits, including increased transparency, efficiency, and security in the procurement process.

Therefore, the addition of Smart Contract as a new factor in the UTAUT model can help to provide a more comprehensive understanding of the determinants of e-procurement behavioral intention in the 3PL industry in Malaysia. Specifically, this thesis aims to investigate the relationships between performance expectancy, effort expectancy, social influence, facilitating conditions, and Smart Contract adoption on e-procurement behavioral intention among 3PL companies in Malaysia. To achieve these objectives, the thesis will use a survey to collect data from 3PL companies in Malaysia. The collected data will be analyzed using structural equation modeling (SEM) to test the proposed model and examine the relationships between the variables. The findings of this thesis could have significant implications for policymakers, managers, and researchers interested in promoting the adoption of e-procurement in the logistics industry. By identifying the determinants of e-procurement adoption using the expanded UTAUT model, this thesis could inform policies and strategies aimed at promoting the use of e-procurement systems and Smart Contracts, ultimately leading to cost savings, efficiency improvements, and better supplier relationships. Additionally, the study's use of SEM could contribute to the methodological advancements in the field of e-procurement research.

Several studies have investigated the factors that influence the adoption of e-procurement systems in different industries. For example, the Unified Theory of Acceptance and Use of Technology (UTAUT) model has been widely used to identify the determinants of technology adoption in various contexts (Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, 2003). UTAUT proposes that four key factors, namely performance expectancy, effort expectancy, social influence, and facilitating conditions, influence users' behavioral intention to use a technology (Gordon B. Davis and Fred D. DAVIS Viswanath Venkatesh, Michael G. Morris, 2003). In the context of e-procurement adoption in the logistics industry, several studies have used UTAUT to identify the key factors that influence users' behavioral intention to use e-procurement systems. For instance, (X. Chen et al., 2019) found that performance expectancy, effort expectancy, and facilitating conditions significantly influenced users' behavioral intention to use e-procurement systems in the logistics industry in China. Similarly, (Arquitectura et al., 2015) found that performance expectancy, effort expectancy, and social influence were significant determinants of e-procurement adoption in the logistics industry in the United States. However, to the best of our knowledge, no previous studies have incorporated Smart Contract as a new factor in the UTAUT model to investigate its influence on users' behavioral intention to use e-procurement systems in the logistics industry. This gap in the literature highlights the need for further research to investigate the potential influence of Smart Contracts on e-procurement adoption in the logistics industry, particularly in the context of cross-border transactions in Malaysia. In conclusion, the citations provided above further support the research problem statement of the thesis, emphasizing the need for further research to identify the determinants of e-procurement adoption in the logistics industry in Malaysia, incorporating Smart Contract as a new factor in the UTAUT model.

LITERATURE REVIEW

Concept of 3PL

(Giri and Sarker, 2017) define a 3PL as “an independent enterprise who does not own the product(s) or service(s) but participates in the supply chain and provides logistics services under a contract to the manufacturer, retailer(s) and/or consumers of a product or service. As describe by (Wang et al., 2020) 3PL service users outsource a broad array of inventory, transportation, warehousing, and customer service functions to service providers that are equipped with advanced technologies and global coverage. 3PL comprises four basic services: inventory and logistics management, warehousing, transportation, and customer service. These services are integrated to optimize information and material flow. The focus on 3PL relationships has evolved over time from relationships to mutually beneficial and continuous partnerships with a strategic value- added orientation. Perspective from (Huo et al., 2015) mention that logistics outsourcing has become an important strategic means of business development, and its primary focus has shifted from basic logistics functions (such as transportation and inventory) to flexible and value-added services (such as customized or advanced logistics) that fulfil changing customer requirements. In response to these coordination and integration challenges, manufacturers

and retailers are increasingly decentralizing their operations by outsourcing part or all of their supply chain (SC) functions such as warehousing, transportation, and distribution to third-party logistics (3PL) firms (Martin and Luzuriaga, 2019

Many organizations have outsourced their logistics activities to 3PL providers in order to focus on their core competencies, which reduces operating costs and improves service level. Since many 3PL providers already orchestrate their clients' supply chains (Zacharia et al., 2011), they are in an advantageous position to synergize a procurement service for value creation. Manufacturers hire third-party logistics providers to handle their logistics needs. 3PL providers benefit contractors by lowering transportation and warehousing operation costs, reducing logistics-related fixed assets, and improving information accuracy and order fulfilment (Patterson et al., 2010). To control logistics costs and improve service quality, most manufacturing enterprises above a certain size use an open auction to procure logistics services (Ignatius et al., 2014). Recently, 3PL companies have made their presence felt in diversified activities. (Lieb and Schwarz, 2001) describe that Inbound and outbound transportation, warehousing, in-plant material handling, freight forwarding, scrap disposal, fleet management, demand forecasting, inventory management, order entry and processing, customs clearance, product labelling, packaging, after-sales support, procurement, distribution, and channelling were the most important 3PL services used by manufacturing companies, according to previous research.Submit your manuscript electronically for review.

Adoption e-procurement in the 3PL logistics

E-procurement, commonly referred to as electronic procurement, is the business-to-business (B2B) ordering, ordering, and purchase of products and services online (Sachini Chandrasekara, 2020). Leading 3PL in various industries have already optimized their procurement processes to some extent with emerging technologies, whereas smaller players have not. According to Philippart, M., Verstraete, C. and Wynen (2005) The primary benefit of e-procurement is that the traditional process is supported by a system that collects all information and activities, resulting in "one-to-one" communication between buyer and supplier. As Florian Bienhaus and Abubaker Haddud (2017) highlight the current state of the art in the interaction of "procurement" and "digitisation," as well as sketching out a future framework based on challenges and requirements. According to Schmock, D.A., Rudzki, R.A. and Rogers (2007), one digital solution is the collection of information on a digital platform that can be accessed, shared, and processed in the most transparent and real-time manner with all supply chain parties to create a "many-to-many" communication. Hoejmose, S., Brammer, S. and Millington (2013), emphasise the importance of trust and transparency as key drivers for long-term success in buyer-supplier relationships, also fund procurement to act as a strategic interface.

The findings of the study Tai, Y.-M. (2010) confirm that electronic execution of purchasing activities improves both the operational and strategic dimensions. E-procurement systems improve supplier and buyer performance. Procurement, which began as an automation device, eventually provided value-added services such as information sharing and technology support (Sachini Chandrasekara, 2020). The process of purchasing logistics services with an emphasis on green and sustainability has generally been approached from three perspectives: Shippers, 3PL and both shippers and 3PLs (Large et al., 2013). However, shippers and 3PLs may have multiple supply chain relationships beyond dyadic relationships (Panayides and So, 2005), and as such need to be investigated in a broader context. This comprehensive strategy was used by to examine the roles that shippers and 3PLs play in acquiring logistics services that are environmentally friendly (Jazairy, 2020). Purchasing transportation and logistics services is a relatively unexplored area, with only a few specific articles available. A framework for purchasing 3PL services by small and medium-sized enterprises (SMEs) was presented by (Holter et al., 2008) which included elements such as comparative bids; cost, service, and transit time comparisons; and supplier management. Firms nowadays engage in continuous procurement and collaboration with their supply chain partners. The company orders products from suppliers in a specific area on a regular basis based on inventory, forecasted demand, and inventory policy (Crainic et al., 2016). Firms can negotiate directly with carriers but are more likely to work with a third-party logistics service provider (3PL) (Selim et al., 2019).

Smart Contract (SQ)

Smart contracts are a promising technology that has gained significant attention in recent years. Field (Buterin, 2014) defines a smart contract as "a computer program that automatically executes the terms of a contract when

certain conditions are met." These conditions are coded into the contract, which is then stored on a blockchain network. Once the conditions are met, the contract is automatically executed without the need for human intervention. Smart contracts can potentially revolutionize how contracts are executed in various industries. Smart contracts have a wide range of applications in various industries. In the financial industry, smart contracts can be used to automate the execution of financial contracts such as insurance policies, loans, and derivatives. For example, (Park, K., & Lee, 2018) propose a smart contract-based insurance system that eliminates the need for intermediaries and reduces the cost of insurance. In the real estate industry, smart contracts can be used to automate the buying and selling of property. For example, (Li, Q., & Liang, 2019) propose a blockchain-based platform that uses smart contracts to automate the process of real estate transactions. In the supply chain industry, smart contracts can be used to automate the tracking of goods and the execution of contracts between suppliers and buyers. For example, (Xu, X., Weber, I., Staples, M., Zhu, L., & Bosch, 2018) propose a blockchain-based supply chain management system that uses smart contracts to automate the process of contract execution and payment. Smart contracts offer several benefits over traditional contracts. First, they are self-executing, which means that they eliminate the need for intermediaries such as lawyers, brokers, and notaries. This reduces transaction costs and improves efficiency. Second, smart contracts are transparent, which means that all parties involved in the contract can view the terms and conditions. This increases trust and reduces the likelihood of disputes. Third, smart contracts are tamper-proof, which means that once they are executed, they cannot be altered. This increases security and reduces the risk of fraud. As noted by (Böhme, R., Christin, N., Edelman, B., & Moore, 2015), smart contracts can "increase trust and reduce transaction costs by eliminating intermediaries, providing transparency, and automating contract execution."

Despite their benefits, smart contracts also face several challenges. First, they require high technical expertise to develop and implement. This can be a barrier to adoption for small and medium-sized enterprises. Second, smart contracts are only as good as the code that powers them. If the code contains bugs or vulnerabilities, it can lead to serious consequences. For example, (Tschorsch, F., & Scheuermann, n.d.) note that "smart contracts have been subject to several high-profile attacks in recent years, resulting in significant financial losses." Third, smart contracts are still subject to legal and regulatory frameworks. This means that they may not be suitable for all types of contracts. For example, (Werbach, K., & Cornell, 2018) argue that "smart contracts will not replace traditional contracts in all cases, but rather will coexist with them." In addition, research can be conducted on how to address the scalability issue in smart contracts. Field (Abubakar et al., 2019) noted that the scalability of smart contracts is a significant challenge, as executing large numbers of smart contracts simultaneously can quickly become computationally intensive. This can limit smart contract adoption in industries requiring high transaction volumes. (Swan, 2015) added, "smart contracts raise important questions about governance, as the code that governs the contract is immutable and cannot be changed once it is deployed." This can be a concern in situations where unforeseen circumstances arise and the contract needs to be modified. Research can be conducted on how to address the issue of governance in smart contracts, such as through the use of decentralized autonomous organizations (DAOs).

Furthermore, there is a need for research on the ethical implications of smart contracts. As noted by (Narayanan, A., Clark, J., Devadas, S., & Felten, 2016), "smart contracts can have unintended consequences and can perpetuate biases that are encoded in the code." This can have negative effects on vulnerable populations, such as those who are discriminated against based on their race, gender, or socioeconomic status. Research can be conducted on how to address the ethical implications of smart contracts, such as through the use of ethical design principles and inclusive stakeholder engagement.

Overall, smart contracts are a promising technology that has the potential to transform various industries. However, some several challenges and considerations must be addressed to ensure their effective and responsible use. Further research is needed in various areas to address these challenges and advance smart contract development and adoption.

UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)

Researchers overwhelmingly accept that UTAUT synchronised the hypotheses of technology acceptance. UTAUT, according to (Bagozzi, 2007), is a patchwork of several unintegrated versions that bridge the loophole in specific models. According to (Weber, 2012) paradigm, UTAUT is a high quality theory. Weber's method

assesses the consistency of theories by assessing theory assessment as a component and theory as a whole using a variety of metrics. Weber has described five fundamental parameters for theory evaluation: constructs, relations, states, and events; while for theory as a whole, these criteria apply: significance, novelty, parsimony, degree (micro, meso, or macro), and falsifiability. But UTAUT has conceptually and empirically followed all of the parameters for parsimony. This is due to UTAUT's poor parsimony in comparison to TAM. According to (Alghamdi, 2014), UTAUT has passed the validity test in the field of financial technology. The model's elements are generally recognised as frameworks for measuring technology adoption. According to (Williams, M., Rana, N., Dwivedi, Y., and Lal, 2011), UTAUT is the most cited theory, but its actual use in research is still poor. Only 43 of the researchers in the sample used UTAUT structures for observational analysis. Just 16 of these analyses entirely use UTAUT as the primary theoretical structure. The founder of UTAUT stated that, for two reasons, UTAUT should be applied as the main backbone of the analysis without including other variables. First, the UTAUT has integrated the eight (8) key theories into acceptance technologies and models. Second, the incorporation of UTAUT into studies allows the study to comprehend the fundamental diffusion of technology (Williams, M., Rana, N., Dwivedi, Y., and Lal, 2011). Thirdly, UTAUT currently focuses on the study of financial technologies by academics and scholars, although the structures used by researchers are largely in the UTAUT system (Chhonker, M. S., Verma, D., and Kar, 2017). (Viswanath Venkatesh, James Y. L. Thong, 2016) mentioned that UTAUT technology and innovation studies have failed to examine moderating influences, such as age, gender, expertise and voluntary activities. This thesis would use UTAUT as the key theoretical structure because of its quality in the adoption of technology on Islamic fintech.

Each variable must be examined carefully in order to examine the coherence of the theory with the specific invention and technology in the study adoption of e-procurement in Islamic Fintech adoption using UTAUT. The key variables in the original UTAUT model include performance expectations (PE), effort expectations (EE), social impact (SI), and enhanced conditions. (P. . Lai, 2017) argued in the context of social influence (SI), which was negligible and low psychometric results, that Islamic Fintech, let alone, is not the marketplace as financial technology. Some suggested that if creativity and technology was compulsory it should have a social impact element, while (Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, 2003) found that there was substantial social influence in early adoption. While there is a variation in social influence, this should be included in the behavioural intention factor, as Islamic Fintech seems to be in early adoption. In the Islamic Fintech analysis these three will be omitted because the factors are expected not to be substantially linked to behavioural intent because the innovations and technologies have not yet reached the mass acceptance level. In this analysis, the importance of experience as a moderator of behavioural purpose will be preserved. Studies carried out by the creator of UTAUT (Viswanath Venkatesh, 2012) have shown that experience does not significantly reduce the impact of hedonic motivation in terms of the situation and the desire to facilitate actions. In addition, background in (Viswanath Venkatesh, James Y. L. Thong, 2016) is combined as a consumer attribute. In 3PL the researcher aims to examine the behaviours and intention of e-procurement, which means that the respondents can use innovation themselves or do not already use it. Meanwhile, the role of voluntariness will be examined in 3PL e-procurement because voluntariness is part of the organisational environment (Viswanath Venkatesh, James Y. L. Thong, 2016), whereas in the sense of 3PL, the use of innovation in financial technology is not limited to whether it is voluntary or obligatory. As a result, the UTAUT theoretical structure for e-procurement in 3PL adoption is as follows: Each variable must be examined carefully in order to examine the coherence of the theory with the specific invention and technology in the study adoption of e-procurement in 3PL adoption using UTAUT. The key variables in the original UTAUT model include performance expectations (PE), effort expectations (EE), social impact (SI), and enhanced conditions. (P. . Lai, 2017) argued in the context of social influence (SI), which was negligible and low psychometric results, that e-procurement in 3PL, let alone, is not the marketplace as financial technology. Some suggested that if creativity and technology was compulsory it should have a social impact element, while (Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, 2003) found that there was substantial social influence in early adoption. While there is a variation in social influence, this should be included in the behavioural intention factor, as e-procurement in 3PL seems to be in early adoption. In the 3PL e-procurement analysis these three will be omitted because the factors are expected not to be substantially linked to behavioural intent because the innovations and technologies have not yet reached the mass acceptance level. In this analysis, the importance of experience and voluntaries of use as a moderator of behavioural purpose will be preserved. Studies carried out by the creator of UTAUT (Viswanath Venkatesh, 2012) have shown that experience does not significantly reduce the impact of hedonic motivation in terms of the situation and the desire to facilitate actions. In addition, background in (Viswanath Venkatesh, James Y. L.

Thong, 2016) is combined as consumer attribute.

Performance expectancy

(Huang, H., Li, J., & Li, 2020) explore the role of performance expectancy in the adoption of e-procurement systems using UTAUT as a theoretical framework. The authors summarize the key findings from previous studies on performance expectancy, including its positive impact on adoption intention and its mediation effect on other factors such as ease of use and perceived risk. (Huang, H., Li, J., & Li, 2020) also identify several factors that may influence performance expectancy, such as system quality, information quality, and user experience. They note that these factors can be addressed through system design, user training, and organizational support.

Overall, the review by (Huang, H., Li, J., & Li, 2020) highlights the importance of performance expectancy in the adoption and effective use of e-procurement systems and provides insights into the factors that influence its impact. (Chen, X., Lu, Y., & Xu, 2019) argue that performance expectancy is a key determinant of e-procurement adoption in SMEs, as it reflects the perceived usefulness of the technology for business operations. They note that performance expectancy can be influenced by various factors, including individual characteristics, organizational culture, and system design. (Parveen, F., Jaafar, N. I., & Mohamad, 2018) identify several challenges to e-procurement adoption in developing countries, such as lack of infrastructure, limited resources, and cultural barriers. They note that these challenges can be addressed through effective policy, strategic planning, and stakeholder engagement. (Oyedele, L. O., Owolabi, H. A., Alaka, H. A., Ajayi, S. O., Akinade, O. O., Bilal, M., ... & Kadiri, 2018) summarize the key findings from previous studies on performance expectancy, highlighting its positive impact on adoption intention and its mediation effect on other factors such as ease of use, social influence, and facilitating conditions. (Baffour, F. K., Banahene, D. O., Quaidoo, F. O., & Owusu, 2020) highlights the importance of performance expectancy in the adoption and effective use of e-procurement systems in developing countries, and provides insights into the factors that influence its impact.

Effort expectancy

(Soni, U., & Khurana, 2020) investigate the factors influencing the adoption of e-procurement systems in third-party logistics (3PL) firms in India, with a focus on the role of UTAUT and its constructs including effort expectancy. The authors summarize the key findings from previous studies on effort expectancy, highlighting its positive impact on adoption intention and its mediation effect on other factors. (Chen, C. C., & Wu, 2018) identify several challenges to e-procurement adoption in 3PL firms in Taiwan, such as lack of trust, resistance to change, and lack of technical support. They note that these challenges can be addressed through effective change management, system design, and stakeholder engagement. Furthermore, the authors suggest that 3PL firms can enhance their adoption of e-procurement by emphasizing the benefits of the system, providing user training, and offering incentives for adoption. Overall, the review by (Jang, H. J., Yoon, S. W., & Jang, 2017) emphasizes the importance of effort expectancy in the adoption and effective use of e-procurement systems in 3PL firms, and provides insights into the factors that influence its impact.

Social influence

(Erol, S., Yurt, Ö., & Özalp Vayvay, 2018) examine the factors influencing the adoption of e-procurement systems in 3PL firms based on the UTAUT model, with a focus on the role of social influence. The authors identify several studies that have highlighted the positive impact of social influence on e-procurement adoption in 3PL firms, suggesting that peer pressure and management support are key determinants of adoption. The term "social influence" refers to the situation in which a user chooses a technology based on the influence of family, peers, friends, and other important people in society (Ganotice and King, 2014). (Abdul Razak et al., 2017) found that social influences and perceived barriers significantly impact the continuous usage of the 3PL using e-procurement applications. (Liu, Y., Jiang, C., & Li, 2019) highlight the importance of the regulatory environment, such as government policies and regulations, in promoting the adoption of e-procurement systems in 3PL firms. They also emphasize the role of supply chain integration, such as collaboration with suppliers and customers, in enhancing the effectiveness of e-procurement systems. Finally, the authors suggest that information technology capabilities, such as system functionality and compatibility, are critical for successfully adopting and using e-procurement systems.

Facilitation condition

Facilitating conditions are defined as the degree to which a user believes that technical infrastructure exists to support the electronic procurement system (Gordon B. Davis and Fred D. Davis Viswanath Venkatesh, Michael G. Morris, 2003). Facilitating conditions include several dimensions in existing research, that is, compatibility, a resource necessary, knowledge necessary, a specific person and help of others (Gupta and Dogra, 2017), and hardware and accessory devices. Facilitating conditions includes the technical aspect in an organizational environment by helping to remove hurdles of individuals or users by using an e-procurement system. This is described as the extent to which a person believes that there is an organizational and technological infrastructure to facilitate the use of a system. It is assumed that the enabling factors will have a beneficial impact on the actions of the use of **e**-procurement.

Experience

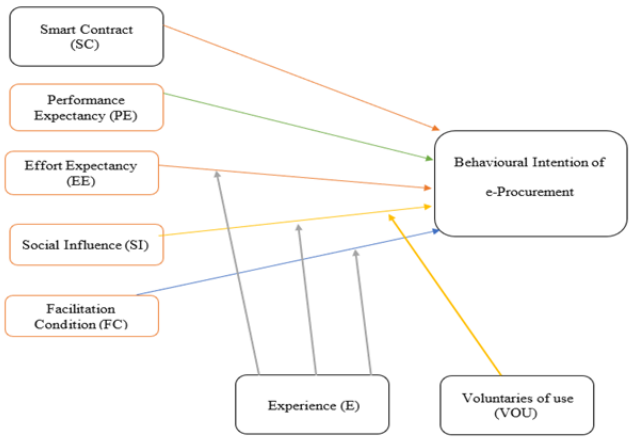
(Singh, S., & Verma, 2021) explain that 3PL firms can enhance their adoption of e-procurement by leveraging their prior experience with information technology, such as by building on existing technical knowledge and skills, providing user training, and offering incentives for adoption. (Haron, H., & Tan, 2019) conducted a literature review on the factors influencing the adoption of e-procurement systems in 3PL firms in Malaysia, with a focus on the moderating role of experience. The authors identified several studies that have highlighted the positive impact of experience on adoption intention, suggesting that prior experience with information technology can mitigate the impact of other factors such as perceived risk. Agree by (Jeong, J., & Shin, 2019) that prior experience with information technology can enhance the effectiveness of e-procurement systems.

Voluntaries of use

(Qin, X., Ma, X., & Zhou, 2017) highlighted the positive impact of voluntariness of use on adoption intention and system use, suggesting that voluntary use can enhance user satisfaction and performance. Agree by (Karim, S., Chowdhury, M. S., & Rahman, 2017) that voluntary use can enhance user motivation and engagement. Furthermore, (Korkmaz, T., & Özer, 2020) suggest that 3PL firms can enhance their adoption of e-procurement by taking into account the level of voluntariness of use, such as by providing incentives and support for voluntary use, building trust among stakeholders, and ensuring user participation. Agree by (Qin, X., Ma, X., & Zhou, 2017) suggest that 3PL firms can enhance their adoption of e-procurement by providing a user-friendly interface, ensuring system security and reliability, and providing incentives and support for voluntary use. They also emphasize the importance of considering the cultural and organizational context of 3PL firms in promoting adoption.

Conceptual framework of study

The researcher aims to examine the behaviours intention of e-procurement by 3PL industries, which means that the respondents can use innovation themselves or do not already use it. Meanwhile, the role of experience an voluntaries of use will be mediating to examined in 3PL e-procurement due it part of the organisational environment (Viswanath Venkatesh, James Y. L. Thong, 2016). As a result, the UTAUT theoretical structure adoption is as follows:



CONCLUSION

This proposal aims to explore consumer behaviour in 3PL e-procurement activity. The UTAUT is used in conjunction with pre-defined variables like smart contracts (SQ). Experience and Voluntaries of use act as moderating variable. The research proposed to use 3PLs as the population and sampling as 3-procurement users. The thesis would also use SEM to interpret the data to address the research question and accomplish the research goal. To understand the need and actions of consumers' purpose and also of consumers themselves in understanding 3PL in adopting e-procurement.

The contribution of this research will give a new direction for 3PL to apply smart contracts in their activities and process, mainly in e-procurement. It will indirectly support an ecosystem of the 3PL supply chain with more governance and integrity. The digitalization era needs all industries to change their business method, especially in the business process where it gains business more productive, cost savings, and, most important, can be more dynamic and functional.

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