

Influence of Information Security Awareness on Information System Implementation in Manufacturing Industry in China

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Abstract

Information security is one primary function of any information management system, ensuring protection of sensitive information like financial data, customers' credentials and intellectual property from unauthorized and illegal access. The present study, while emphasizing on an effective implementation of information system, aimed to examine the impact of information security awareness (ISA) on self-efficacy to comply (SEC), attitude towards compliance (ATC) and intention to comply (IC) and the role of these constructs on information system implementation in the manufacturing industry in China. The study also examined the mediation role of SEC, ATC and IC among ISA and information system implementation. Data was gathered through surveys responded by a sample of 357 employees of the manufacturing industry in China. To check the data reliability and association among variables, smart-PLS was used, which indicated that ISA had a positive impact on SEC, ATC and IC and these constructs, in turn, positively impacted information system implementation. The results also exposed that SEC, ATC and IC significantly mediate among ISA and information system implementation in the manufacturing industry in China.

Keywords

Information Security Awareness, Self-Efficacy to Comply, Attitude Towards Compliance, Intention To Comply, Information System Implementation.

1. Introduction

An information system is an organizational, formal, and sociotechnical system comprising of software, hardware, and telecommunication. It is designed to acquire, process, store, and distribute information. As manual data entry is difficult and very time-taking, the information systems can be very useful in this regard. Information system stores data sophisticatedly by simplifying the process of data finding (Dhillon *et al.*, 2021). An effective information system facilitates effective communication among employees since documents are organized in folders, making it simpler to share and access the documents among employees (Berdik *et al.*, 2021). A number of businesses prepare information system and utilize information technology to accomplish and manage their operations, build interaction with consumers, and the most important, stay ahead of competitors (Alawamleh *et al.*, 2021). To a business organization, information system is also helpful in decision-making process. With the help of an effective information system, all the essential information is delivered and it makes smarter decision-making much easier. With the help of an effective information system, businesses can maintain documents, histories, communication logs, and operational data (Zhang, 2023).

One of the major functions of information system is to provide information security. Information security protects sensitive information or data from unauthorized practices like illegal access, inspection, modification, recording,



interruption, or destruction. The objective of information security is to provide safety and privacy of critical information like financial data, customer account details, and intellectual property (Qodirov *et al.*, 2021). Information security puts a strong impact on a firm's goodwill, its operations, and competitiveness with the rivals in market along with the influence on employees' personal and professional lives, and their relation to the organization (employer or top management). The information security policies are designed and enforced giving potential to information system (Salagrama, 2021). Information security awareness (ISA) is the knowledge and understanding of information security, its need, and conformation of information security policy, and a basic requirement of information system implementation. ISA makes employees aware of how information security policy protects their lives, secures their personal dealings, save them against emotional destruction, and protect their economic rights. It also gives a sense that success of organization provides them livelihood and source of their future progress, and all this depends on information security. The employees' enlightenment after getting ISA creates the personal traits like self-efficacy to comply (SEC), attitude towards compliance (ATC) and intention to comply (IC) with the information security policy. In result of these personal traits, employees cooperate to implement an information system (Taherdoost, 2022).

China is a developing country and carries an economy with higher middle-income potential. In the terms of normal gross domestic product (GDP), China places at the second rank among the world largest countries, whereas according to its purchasing power parity, China saves the first place in world largest countries. As per the 2023 Chinese facts and figures, the nominal GDP of the country is \$19.373 trillion. It shows 8.4% increase in GDP growth rate (Wang *et al.*, 2023). For its manufacturing, China is considered the world largest economy, due to its advanced manufacturing units, cheap factors of production, and labor-intensive industry (Zhou; Li, 2021). It has grown as an industrial hub because of the presence of technically expert laborers, good quality infrastructure, and lower labor costs. There is a dramatic change in China's progress and manufacturing profile, in contrast to developed regions having the value chain and labor-intensive industries that are relocating inland (Carniel; Timmins, 2023). Businesses are not only restricted to manufacturing products for international market through exports in order to serve the Chinese market, rather they are also to manufacture products to serve the domestic market (Zhu *et al.*, 2023). There is also a decrease in the contribution of manufacturing industry to country's GDP. Despite this, the manufacturing industry contributes to economic growth at 42.6% rate. This sector provides employment opportunities to 30% labor force.

The manufacturing sector of China thus serves the inland market accomplishing the domestic needs and also provides goods for the international market. Still the manufacturing businesses are devoid of a healthy competition in market because of the lack of information management. The current study presents a solution as its focus is on information system implementation across manufacturing units of China. This study emphasizes on information system implementation within various manufacturing units in China. The study's objective is to examine the influences of Information security awareness (ISA) on self-efficacy to comply (SEC), attitude towards compliance (ATC) and intention to comply (IC) and information system implementation.

By examining these constructs viz., ISA, SEC, ATC and IC, the study makes significant contributions to this domain. For instance, previous studies have discussed the influence of ISA in isolation choosing one of these constructs, but the current study makes a combined study of all these traits in connection with information security policy and thus checks the impact of ISA on all the afore-mentioned traits in a single study. Previous authors also examined a direct association of ISA with information system implementation, without discussing the mediating role of any of the constructs or variables. This study checks the mediating role of SEC, ATC, and IC between ISA and information system implementation, which differentiates this study from previous ones and considered a useful contribution to literature. Last, but not the least, this study is first of its kind to check the role of ISA in developing SEC, ATC, and IC and implementing information system in China's manufacturing organizations.

This study comprises five parts: after the introduction in the first part, the second part presents a literature review shedding light on the relationship among ISA, SEC, ATC, IC and information systems and framing the research hypotheses. The third part explains the methods and techniques applied for the study, while the fourth part tests the research model and presents results. In the final part, results are discussed with confirmation from past studies. The study ends with conclusion, implications, and limitations.

2. Literature Review

Information security to employees secures their personal data and keeps them safe from financial, emotional, and psychological attacks from outsiders. The employees who have awareness of information security, understand its worth in their lives. Considering information security's significance, employees gear a strong belief and confidence in their capabilities to comply with the rules of information security (Torten *et al.*, 2018). Hwang *et al.* (2021) investigate the impact of ISA on SEC on a sample of 398 organizational employees, testing the research model through structural equational modeling with AMOS 22.0. The study posits that if an organization provides information security and employees have its knowledge, they feel supported and confident regarding their ability to comply. Cuganesan *et al.*

(2018), also state that ISA enlightens employees' thoughts about the usefulness of information security to organization and employees themselves. Knowledge of the benefits of information security and its assurance, therefore, develops employees' SEC if they complied with the rules and regulations prescribed in information security policy. This leads to the first hypothesis of the study.

H1: Information security awareness has a positive association with self-efficacy to comply.

The information security to employees in an organization can strengthen the employees' position and secure their personal lives. Employees attaining ISA, therefore, prefer it for the professional lives and show a positive attitude and comply with the directions from management for maintaining information security (Bada *et al.*, 2019). Ali *et al.* (2021) throw light on ISA, and attitude towards information security and policy compliance. Taking excerpts from various reviews and studies on social science, computer science, information security (behavioral aspect), and information systems, the study conveys that ISA gives a peace of mind to employees regarding their personal lives and career. It enables employees to show positive attitude information security policy compliance. Another study by Mamonov and Benbunan-Fich (2018) indicates that when employees got ISA, they find their well-being with the execution of information security and also become aware of information role in their professional lives. Thus, employees develop a positive attitude towards information security policy compliance. This argument is tested in the second hypothesis of the study.

H2: Information security awareness has a positive association with attitude towards compliance.

Information security in organizations enables administrators protect their names, resources, strategies from conspiracies of rivals and sustain the business performance accomplishing its goals. The performance and success of an organization directly and indirectly influence employees' well-being. When employees see information security vital to organizational success and their well-being, they intend to comply with the policy for information security (Li *et al.*, 2019). Applying theory of planned behavior, Sommestad *et al.* (2019) checks the relationship of ISA with IC. The study was conducted in Sweden, using a random sampling technique, data were collected from 645 white-collar workers. The study implied that increasing ISA creates employees' attachment with the employer and organization with the sense of support. These employees demonstrate compliance for information security. Likewise, Gratian *et al.* (2018) highlight that the ISA spreading in employees develops a secured communication among themselves and secured interaction with the outsiders as well as it opens the ways to success. Hence, it impresses employees and make them intend to comply the information security policy. The third hypothesis of the study elaborates this argument.

H3: Information security awareness has a positive association with intention to comply.

Employees' SEC is a personal trait where employees have inward confirmation and belief in their strengths and abilities to act upon the prescriptions of the information security policy. When employees get strong inwardly because of self-efficacy, they act as expected and assist in implementing information system (Nord *et al.*, 2020). Hameed and Arachchilage (2021), in an empirical study, checks the influence of SEC on information system security innovation and information system implementation. A meta-analysis of 59 extant research articles was conducted. The study claimed that if employees have SEC, they would help to enforce the information system security innovation. As a result, information system can be implemented properly. The research by Alraja *et al.* (2023), enlighten that the employees with higher SEC, are more active in implementing information system. This helped to frame the fourth hypothesis of the study.

H4: Self-efficacy to comply has a positive association with information system implementation.

Attitude to compliance encompasses the thinking, emotions, and beliefs of employees about the convenience, usefulness, and compulsion of complying the policies and strategies under information system. When employees have positive ATC, they cooperate in bringing changes and implementing information system (Slonka, 2020). D'Arcy and Lowry (2019) examine the relationship of ATC with information system implementation. It is a multilevel longitudinal study with an experience-sampling methodology design where daily surveys were completed by employees over a 2-week period. The study highlights that if employees think positive about the compliance of information security and feel it compulsory, they show seriousness in following the directions of information management and helps in implementing the information system. Karlsson *et al.* (2022) imply that when employees adopt a positive ATC of information security rules and regulations, there is less occurrence of fraud and deceit. Therefore, information system can be easily implemented. Therefore, the fifth hypothesis of the study was framed.

H5: Attitude towards compliance has a positive association with information system implementation.

Employees' IC is their decision, choice, or determination to agree, accord, adapt themselves, and conform to instructions, rules, and regulations when imposed. When employees have the IC, the practices of information management are undertaken effectively. As a result, a proper information system can be implemented (Brown *et al.*,

2024). **Rajab and Eydgahi** (2019) examine the higher education employees' IC with information security policies and information system implementation. Theories like Theory of Planned Behavior, General Deterrence Theory, Protection Motivation Theory, and Organizational Theory provided basis for this study. Survey tool and SEM-PLS methods were also applied. The study highlights that in higher education institutions where employees have IC with the policies designed and imposed for information security, the information system is authentic in its implementation. **Williams et al.** (2019), examine the relationship between IC with information security principles and information system implementation. The study posits that the employees who make firm decision to comply with information security principles and show inclination in this regard, a strong information system can be formed for the institution. The sixth hypothesis of the study presents this argument.

H6: Intention to comply has a positive association with information system implementation.

ISA gives a sense to employees how much beneficial is the information security to employees. Finding information security essential to their lives as protecting their financial resources, personal respect, and future plans intact, employees develop SEC with information security policies. The self-efficacy gives courage and urges the employees to adapt themselves according to information security requirements and thereby, assists in information system implementation (**Koohang et al.**, 2020). **Hina and Dominic** (2020), investigate the association between ISA, SEC, and information system implementation in higher education institutions. The articles published during 2006 and 2016 were examined for collection for the research. The study states that SEC with the information security policy is increased by ISA and it promotes information system implementation. The literary article, presented by **Jaeger and Eckhardt** (2021), shows that the spreading ISA in employees, gives them satisfaction for self-protection and arouses self-efficacy. The employees' SEC with information security rules and regulations prescribed in policies, creates an environment where information system can be effectively implemented. This discussion is reflected in the seventh hypothesis of the study.

H7: Self-efficacy to comply plays a significant mediating role between information security awareness and information system implementation.

ISA enlightens the usefulness of information security to their individual professional lives and the organization whose success determines employees' future career. In this situation, the employees think and feel positive about the compliance of information security direction. Employees positive attitude while confronting the orders and restriction imposed by information management in information policies, result in enacting the concerned information protection strategies. So, employees' ATC mediates between ISA and information system implementation (**Wiley et al.**, 2020). **Barlow et al.** (2018) examine the association between ISA, ATC, and information system implementation. The study highlights that the public or private companies providing ISA to employees, attain employees' positive ATC and implement information system effectively. **Chua et al.** (2018) state that the companies where ISA is provided to employees, they develop a positive ATC of the concerned policies in order to avail of information security. Employees' positive ATC leads the organizations to implement information system. The eighth hypothesis of the study runs thus.

H8: Attitude towards compliance plays a significant mediating role between information security awareness and information system implementation.

ISA provides knowledge to employees about how to attain information security as well as what utilities and futilities information security has for the organization and employees. The employees learning about the information security and its benefits, incline towards information security and decide to act according to the requirements in information security policy. The employees who have IC with the policies, cooperate wholeheartedly and implement information system (**Klobas et al.**, 2019). In an article on ISA, **Khando et al.** (2021) investigate the association between ISA, ATC, and information system implementation. Case study method was applied for the research. The case studies of public and private companies for ISA were examined. The study demonstrates that ISA to employees in an organization increases employees' knowledge about information handling and information security and motivates them for intention to conform the changes under information security policy. Thus, information system can be effectively implemented. The study of **Nasir et al.** (2019) posits that when the company management conducting discussion or learning classes for employees to provide ISA to employees, employees gain mental expertise and have IC with the policies issued for information security. The employees having IC are more active and efficient in implementing the practices of information management. The ninth hypothesis of the study presents this argument.

H9: Intention to comply plays a significant mediating role between information security awareness and information system implementation.

The literature above mentioned exposed the association among ISA, SEC, ATC and IC and their role on information system implementation. It also exposed the mediating role of SEC, ATC and IC among ISA and information system implementation. Based on these discussions, the present study established the framework given in Figure 1:

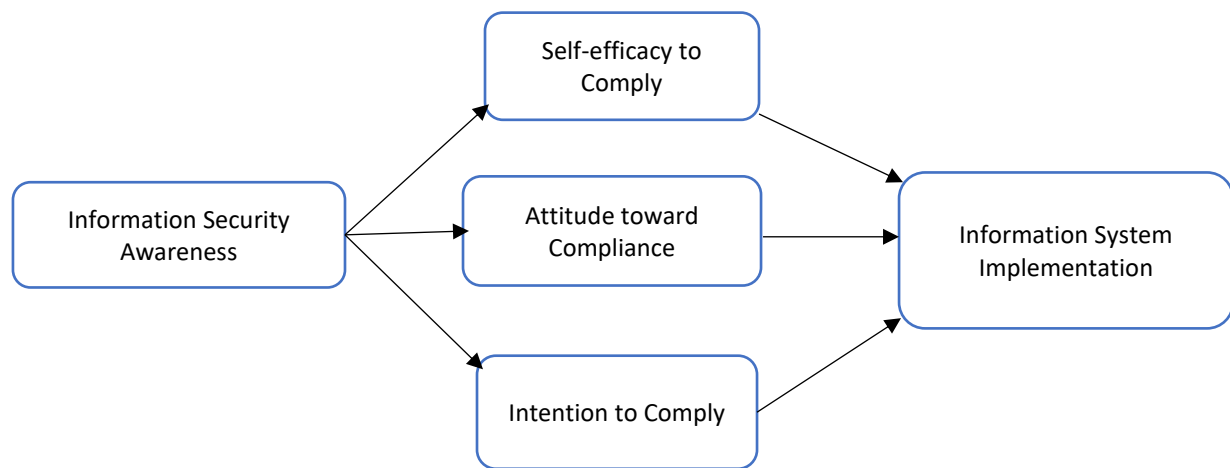


Figure 1: Research Model.

3. Research Methodology

The study examines the impact of ISA on SEC, ATC and IC and their role on information system implementation and also examines the mediation role of SEC, ATC and IC among ISA and information system implementation in the manufacturing industry in China. The data of the study was collected through surveys from the employees of the manufacturing industry in China. The items used to measure the constructs were extracted from previous studies.

For instance, ISA used as independent variable was measured with three items extracted from **Bulgurcu et al.** (2010). Table 1 shows these measurements and variables.

Table 1: Information Security Awareness Items.

Items	Statements	Sources
ISA1	I know the rules and regulations prescribed by the ISP of my organization.	(Bulgurcu et al., 2010)
ISA2	I understand the rules and regulations prescribed by the ISP of my organization.	
ISA3	I know my responsibilities as prescribed in the ISP to enhance the IS security of my organization.	

The construct, self-efficacy to comply (SEC), the mediating variable, was measured with three questions taken from **Hu and Hwang** (2020). Table 2 shows the measurements and variables.

Table 2: Self-efficacy to Comply Items.

Items	Statements	Sources
SEC1	I have the necessary skills to fulfill the requirements of the ISP.	(Hu; Hwang, 2020)
SEC2	I have the necessary knowledge to fulfill the requirements of the ISP.	
SEC3	I have the necessary competencies to fulfill the requirements of the ISP.	

The ATC, another mediating variable, was measured with four questions taken from **Bulgurcu et al.** (2010). Table 3 presents the measurements and variables.

Table 3: Attitude towards Compliance Items.

Items	Statements	Sources
ATC1	To me, complying with the requirements of the ISP is necessary.	(Bulgurcu et al., 2010)
ATC2	To me, complying with the requirements of the ISP is beneficial.	
ATC3	To me, complying with the requirements of the ISP is important.	
ATC4	To me, complying with the requirements of the ISP is useful.	

The IC, another mediating variable of the study, was measured with three questions taken from **Hu and Hwang** (2020). Table 4 shows the measurements and variables.

Table 4: Intention to Comply Items.

Items	Statements	Sources
IC1	Intend to comply with the ISP requirements of my firm in the future.	(Hu; Hwang, 2020)
IC2	I intend to protect technology resources according to the ISP requirements of my firm in the future.	
IC3	I intend to carry out my responsibilities prescribed in the ISP of my firm.	

Finally, the study used information system implementation (ISI) as the dependent variable, which was measured with four questions taken from **Żywiótek and Schiavone** (2021). Table 5 illustrates measurements and variables.

Table 5: Information System Implementation Items.

Items	Statements	Sources
ISI1	Information system provides the access to information and knowledge.	(Żywiótek; Schiavone, 2021)
ISI2	Information system provides the usefulness of information and knowledge.	
ISI3	Information system maintains the level of knowledge.	
ISI4	Information system has the ability to use big data	

A sample size of 357 employees from the manufacturing companies in China was chosen as respondents of the study. These respondents were chosen using simple random sampling technique. The survey forms were distributed by mail or by personal visits to companies. A total 619 surveys were distributed but after fifteen days only 357 valid responses were received. These valid responses were used in the analysis, which scored approximately 57 percent response rate. Smart-PLS was applied to check the data reliability and association among variables. This tool provides the best outcomes using large data sets (Hair *et al.*, 2017). It is commonly used for the analysis of primary data. It also gives best outcomes using complex models (Hair Jr *et al.*, 2020).

4. Results and Findings

Right at the outset, the study checked the convergent validity which exposed the correlation between the questionnaire items. The convergent validity was examined using factor loadings and average variance extracted (AVE). Both the tests exposed the values larger than 0.50. In addition, Alpha and composite reliability (CR) tests were also conducted and both tests exposed the values larger than 0.70. These values exposed a high correlation among items. Table 6 shows these outcomes.

Table 6: Convergent Validity.

Constructs	Items	Loadings	Alpha	CR	AVE
Attitude towards Compliance	ATC1	0.835	0.904	0.933	0.778
	ATC2	0.907			
	ATC3	0.913			
	ATC4	0.870			
Intention to Comply	IC1	0.819	0.837	0.898	0.746
	IC2	0.895			
	IC3	0.876			
Information Security Awareness	ISA1	0.865	0.830	0.898	0.745
	ISA2	0.859			
	ISA3	0.866			
Information System Implementation	ISI1	0.774	0.794	0.866	0.618
	ISI2	0.796			
	ISI3	0.792			
	ISI4	0.781			
Self-efficacy to Comply	SEC1	0.914	0.759	0.866	0.689
	SEC2	0.903			
	SEC3	0.644			

The discriminant validity was examined using Heterotrait Monotrait (HTMT) ratio and the results exposed that the values were lower than 0.85. hence there existed a low correlation between the variables. Table 7 and Figure 2 show these outcomes through path analysis and structural assessment of variables.

Table 7: Discriminant Validity.

	ATC	IC	ISA	ISI	SEC
ATC					
IC	0.268				
ISA	0.739	0.456			
ISI	0.532	0.666	0.702		
SEC	0.309	0.624	0.482	0.789	

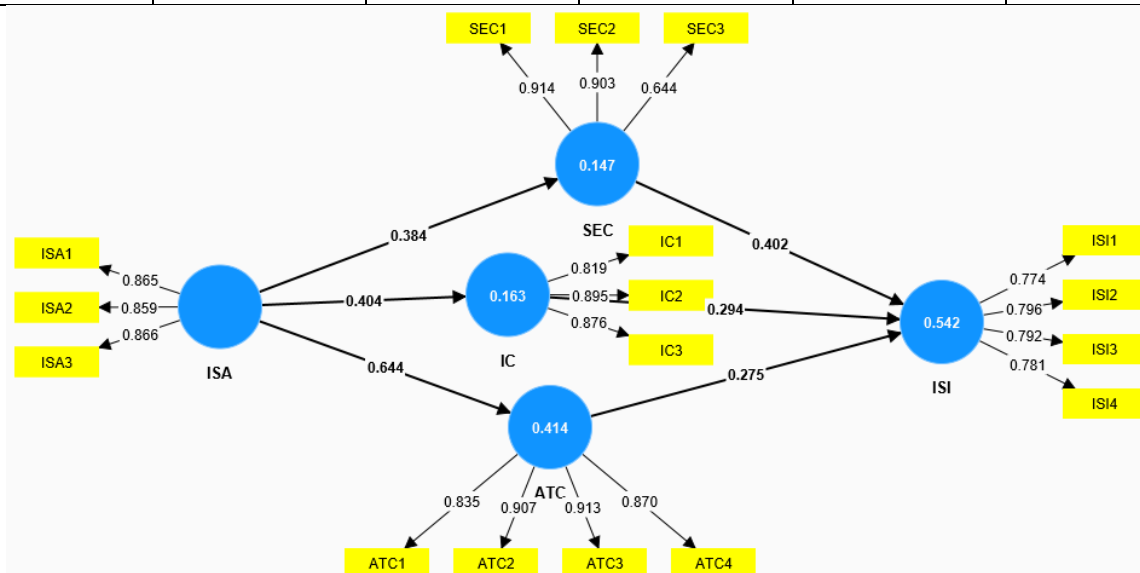


Figure 2: Measurement Assessment Model.

The outcomes indicated that the ISA has a positive impact on SEC, ATC and IC and H1, H2 and H3 were accepted. The results also exposed that the SEC, ATC and IC also have positive impact on information system implementation and H4, H5 and H6 were also accepted. Finally, the results also exposed that the SEC, ATC and IC significantly mediates among ISA and information system implementation in the manufacturing industry in China and accept H7, H8 and H9. Table 8 and Figure 3 show these outcomes through path analysis and structural assessment of variables.

Table 8: Path Analysis.

Relationships	Beta	Standard deviation	T statistics	P values
ATC -> ISI	0.275	0.034	8.089	0.000
IC -> ISI	0.294	0.056	5.238	0.000
ISA -> ATC	0.644	0.042	15.385	0.000
ISA -> IC	0.404	0.047	8.678	0.000
ISA -> SEC	0.384	0.055	6.948	0.000
SEC -> ISI	0.402	0.056	7.122	0.000
ISA -> ATC -> ISI	0.177	0.027	6.663	0.000
ISA -> IC -> ISI	0.119	0.026	4.507	0.000
ISA -> SEC -> ISI	0.154	0.035	4.443	0.000

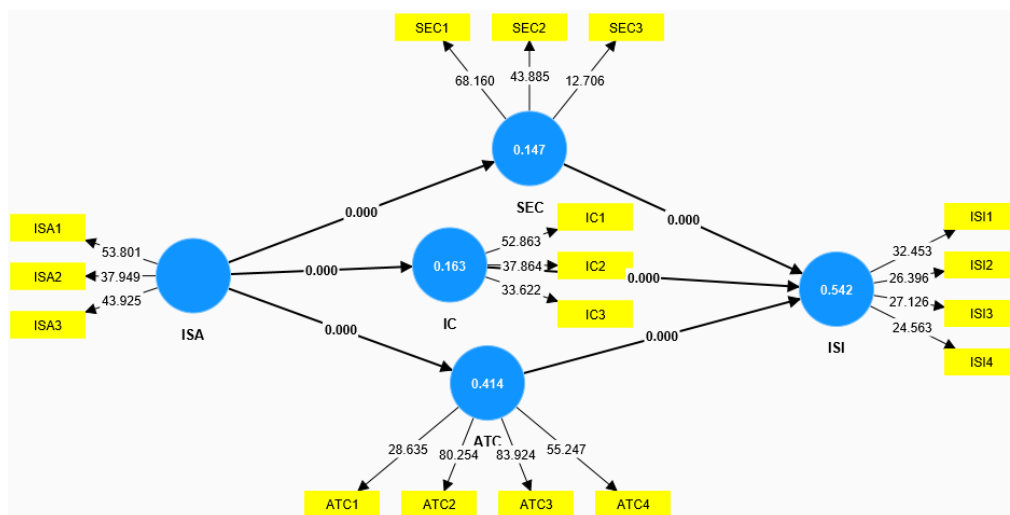


Figure 3: Structural Assessment Model.

5. Discussion

The current study emphasized on studying how information system can be effectively implemented by examining the impact of information security awareness (ISA) on self-efficacy to comply (SEC), attitude towards compliance (ATC) and intention to comply (IC) and the role of these constructs on information system implementation in the manufacturing industry in China. The results reveal that ISA has a positive association with SEC. which is consistent with a study by **Jaeger** (2018), which claimed that if the organizational personnel have ISA, they gear confidence in their abilities to comply with the rules. These results are also in line with **Yoo et al.** (2018), which also stated that professionals who know about the significance of information develop self-confidence to comply with the principles. It was also revealed in this study that ISA had a positive association with ATC, which is supported by **Rajab and Eydgahi** (2019), a study that empirically examined the awareness of information security, and found that ISA builds positivity in organizational personnel’s beliefs, thoughts, and feelings for the organization and motivate them to comply with the regulations. These results are also in line with **Moody et al.** (2018), which posited that when workers find security of their personal information and consider it vital to their performance, they think positive to comply.

The results also revealed that ISA has a positive association with IC, which is supported by **Cram et al.** (2019), which found that self-determination arises in workers for complying the organizational norms and rules, when they are aware of information security. These results also agree with **Kemper** (2019), where authors view that the ISA enables the employees of an organization to understand and intend to comply the concerned rules and regulations. The results also showed that SEC has a positive association with information system implementation. These results are in line with **Liu et al.** (2020), which stated that organizational personnel, who believe in their capabilities and have confidence to meet challenge, take active part in tasks specified by information system. In this situation, information system can be implemented effectively. These results are supported by **Koohang et al.** (2021), which highlighted that employees appointed for information management work efficiently if they have SEC, which makes it easier to implement information system.

The results showed that ATC has a positive association with information system implementation. These results are supported by **Trang and Brendel** (2019), which claims that a positive ATC improves people performance in

implementing information systems. These results also match with **McLeod and Dolezel** (2022), which posits that the working and management employees applying a positive ATC can implement information system effectively. The results showed that IC has a positive association with information system implementation. These results also agree with **Chen et al.** (2023), which explains that the organizational employees who have good intention for compliance, give positive response while implementing information system. These results are supported by **Niemimaa** (2023), which highlights that workers' IC with principles set by organization, increases their capability to implement the information system.

The results showed that SEC plays a significant mediating role between ISA and information system implementation. The study of **Abraham and Chengalur-Smith** (2019) supports these results. This previous study states that employees' SEC is developed by ISA and it helps in information system implementation. These results are also in line with **Zwilling et al.** (2022), which reveals that SEC mediates the relationship between ISA and information system implementation. The results showed that ATC plays a significant mediating role between ISA and information system implementation. These results are supported by **Safa et al.** (2019), which posits that employees' positive ATC is developed by ISA and it helps in information system implementation. These results are also in line with **Safa et al.** (2018), which states that ISA improves the employees' ATC, and thereby improves information system implementation. The results showed that IC plays a significant mediating role between ISA and information system implementation. These results agree with **Chen et al.** (2018), which indicates that IC is created by ISA and it improves information system implementation. These results are also in line with **Alshare et al.** (2018), which states that ISA improves the employees' IC, and helps in information system implementation.

4. Conclusion

This study aimed to examine how a few selected factors like information security awareness (ISA), self-efficacy to comply (SEC), attitude towards compliance (ATC), and intention to comply (IC) make an impact on information system implementation in the manufacturing industry in China. The data was collected through structured questionnaires from employees and working personnel in the Chinese manufacturing sector. The results revealed a positive association of ISA with SEC, ATC, and IC, and showed that when an organizational employees have ISA, they feel them valued, supported, and secured as well as they know the importance of information to their profession and the organizational well-being. They also show courage, which further motivates them to adopt SEC, positive ATC, and IC. The results also demonstrated a positive relationship between SEC, ATC, and IC and information system implementation. Employees' confidence and belief in their own ability to follow the rules, their positive thinking and feelings for compliance, and their determination to obey and follow, provided an air to courage, confidence, inclination, and intention in employees to accept and follow the rules and instruction under information management. As a result, an effective information system can be implemented. Additionally, the study results indicated that SEC, ATC, and IC play mediating role between ISA and information system implementation. The ISA develops SEC, ATC, and IC in employees and enables them to implement information system effectively.

The study faced a few limitations with respect to its framework, as it proposed just the role of ISA in information system implementation. There are numerous other elements like employees' literacy rate, technological innovation, human resources management, and supply chain, to name only a few, which can have a significant influence on information system implementation. Future studies should include some of these factors in their research frameworks. Moreover, the current study is also based on data collected from China alone. In further studies, the relationship among factors used in this study may be analyzed in the context of different countries.

This study shall serve as a leading document in the domain as it offers guidelines for both private and government organizations in China as well as globally. It shows how to implement an effective information system, which suggests that administrators of organizations must provide ISA so that they may develop SEC. The study posits that through suitable polices, organizational management must create ISA among its personnel in order to create positive ATC in employees. The study also offers the guideline that organizational management must form strategies to keep its employees aware of information security, for which they may develop IC. This study also conveys that the administrators should focus on employees' SEC in order to achieve the goal of information system implementation. It is suggested that employees' ATC must be positive so that information system can be effectively implemented. Moreover, the study implies that employees must have IC. In this situation, employees assist and cooperate in information system implementation. Last, but not the least, the study conveys that the organizational manager must provide ISA to develop SEC, positive ATC, and IC so that information system can be effectively implemented.

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