Revista Argentina de Clínica Psicológica
2020, Vol. XXIX, N°5, 69-82
DOI: 10.24205/03276716.2020.1008

The Impact of Artificial and Non- Artificial Intelligence on Production and Operation of new Products -An Emerging Market Analysis of Technological Advancements
A Managerial Perspective

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Abstract

Currently, the new product development and success has been an essential factor for the success of an organization and prominent issue that needs high artificial along with non-artificial intelligence. Thus, the present study aim is to examine the role of artificial intelligence such as technical infrastructure quality, management capabilities and personal expertise along with non-artificial intelligence such as emotional and spiritual intelligence, information processing capability and responsiveness capability on the new product success of the manufacturing organization in China. The examination of the mediating role of new product innovativeness among the nexus of artificial along with non-artificial intelligence and new product success also included in the goals of the current study. The data has been gathered by using questionnaires from the research and development department of manufacturing companies in China and PLS-SEM has been used for analysis purpose. The results revealed that artificial along with non-artificial intelligence has a positive association with the new product success of the organization. The results also show that new product innovativeness positively mediating among the links of artificial and non-artificial intelligence and new product success of the manufacturing organizations in China. These findings have provided the guidelines to the regulation-making authorities that they should develop the regulation that promotes the artificial as well as non-artificial intelligence in the organization that has played a vital role in the success of the organization.

Keywords: Artificial intelligence, Non-artificial intelligence, New product success, New product innovativeness, Market Analysis, Operation, Production

1. Introduction

The achievement of the success of new products in the market has now become a hot issue for research and discussion among scholars. There is an emerging competition in the market, growing shifts in the business environment, and constant changes in customers' preferences, (Gulley, Nassar, & Xun, 2018). To compete in the market, business organizations are striving to bring improvement and innovation in their production to sense and respond to the current and expected shifts (Nagata & Igaki, 2018). They attempt to introduce a new variety of products and make them successful in the market. Several changes in the managerial practices, policies, strategies, infrastructure, and production and marketing procedures are needed to make the new products successful in the market to respond to the emerging market requirements. Some researchers and scholars like Parhankangas and Renko (2017) Courtney, Dutta, and Li (2017) have given vent to their ideas about how to introduce new products in the market and how to make them successful as per changing market requirements. Though they have introduced some factors which affect the popularity and success of

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new products in the market, yet their research is incomplete. They have not yet covered many other factors under their research and discussion, the factors are vital in making the new products successful in the market. This piece of literature has been written to address this gap by exploring the role of artificial and non-artificial intelligence in making new products successful in the market. This artificial intelligence (Hassabis, Kumaran, Summerfield, & Botvinick, 2017) and non-artificial intelligence (Jouzdani & Biria, 2016) are playing an important role not only in removing the causes of failure of new products but also in bringing improvements for the success of new products in the market. This paper proposes the utility of implementing artificial and non-artificial intelligence for the achievement of successful new products by analyzing the implementation of this intelligence in the manufacturing organizations in China.

The article written by Makridakis (2017) represents the considerable significance of artificial intelligence in making the companies' new products successful in today's highly competitive markets. This paper explores the ways how artificial intelligence promotes new products in the market by meeting the changing market demands. This study takes initial steps to enlighten, Artificial intelligence (AI) plays a key role in the achievement of the successful introduction of new products in contemporary business organizations. Artificial intelligence is the utilization of machinery or technology to sense changes, respond to the changes, and perform in a superior way. Moreover, it has become crucial for business organizations for successful new products (Zerbino, Aloini, Dulmin, & Mininno, 2018). AI improves the techniques, brings innovation in technology used for production, and marketing methods. As argued by Bacchus (2001), the implementation of artificial intelligence provides competitive advantages by bringing improvements in the technical and analytical skills of managers and another workforce in business organizations. For the success of new products in competitive markets, such technical capabilities are adopted under AI which integrates and reconfigures the resources and procedures to cope up with the market shifts. As up-to-date plants, machinery, and technology are acquired for production, and business operations, AI facilitates quick decision making and minimizing the time required for the production and marketing of products. The up-to-date technology in operations removes the harmful factors and contaminating material from the production, thus artificial intelligence facilitates the achievement of success in introducing new products, with the customers' satisfaction (Olsson & Fallde, 2015). For the success of new products, they must be more reliable, durable, eco-friendly, and innovative in quality, as to compete with rivals in the market effectively (Modak, Panda, & Sana, 2016). Artificial intelligence facilitates this organizational goal. In this approach, management capabilities are improved that contribute to efficient and timely operational and production strategies, the ability to make appropriate decisions at the right time, and better marketing policies (Contreras & Vehi, 2018). In addition to this contribution, specialized work expertise is developed in personnel with the use of technical training, which adds to the innovation and better quality in production. In China, the manufacturing companies are moving towards the implementation and execution of artificial and non-artificial intelligence in their managerial, operational, and production procedures. The companies that show serious conduct towards the implementation of artificial and non-artificial intelligence are successful in introducing new products.

This paper is the initial attempt to show the key influence of non-artificial intelligence on the successful marketing of new products. In the contemporary competitive market environments, it is intensely needed to keep an eye on the changing market requirements and customers' preferences and to create the ability to respond to those shifts in the business environment (McIntosh, De Janvry, & Sadoulet, 2005). For this purpose, an effective information system is designed, collaboration with the companies' stakeholders is built, and judge the internal capabilities of personnel (Choi & Contractor, 2016). Non-artificial intelligence is implemented to utilize the information acquired appropriately to achieve the set goals. The collaboration among internal personnel and the company's outsider assists to improve production and service quality, and to build confidence in customers that ultimately raise the market for the new products (Aqdas, Amin, Nawaz, & Abdullah, 2020; Evans, 2015). The implementation of non-artificial intelligence in the manufacturing companies in China has created self-awareness in personnel and the awareness of the market shifts, in technology, and customers' preferences. Such awareness proves to be beneficial in making new products successful. Recent research has represented that the business organizations which are implementing non-artificial intelligence are successful to compete the rivals in introducing and

selling new products in market places. Under the head of non-artificial intelligence, this paper focuses on the remarkable influences of individual personality intelligence and team intelligence on the achievement of new products in the market. The individual personality intelligence develops individual capabilities in personnel of the business organization to judge the changing marketing circumstances and customers' preferences and to deal with the stakeholders fairly. It motivates self and public awareness, improves analytical skills in personnel, and minimizes the risk factors. Individual personality intelligence help to overcome frauds, cheats, and bad dealings, it boosts up personnel to perform functions honestly showing a great sense of responsibility not only to the concerned organization but also to the society. It encourages fair business dealings that in turn raise successful marketing not only for existing products but also for new products. Similarly, team intelligence also contributes to the achievement success of new products. Team intelligence boosts up collaboration among personnel to process the information acquired about market changes, customers' preferences, and technology use in business operations and production, to respond to them accurately.

This study puts stress on the mediating role of new product innovativeness between artificial and non-artificial intelligence, and new product success. As there is constant competition among different business organizations, the success of new products is dependent on the innovativeness and superior quality of new products. Innovativeness in the production processes of new products guarantees the successful marketing of new products (Calantone, Chan, & Cui, 2006). Artificial intelligence, in the view of Lu, Li, Chen, Kim, and Serikawa (2018), brings improvement in the technology employed for operations, plants used for production, and other machinery used to maintain the work efficiency of personnel. The improvement, and innovativeness in technical infrastructure directly or indirectly bring innovativeness in the new products (Blyde & Molina, 2015). The management capabilities are developed to sense the shifts in the business environment and to reconfigure and integrate the resources and procedures in such a way to utilize them effectively to respond to the up-to-date market and customers' requirements. Similarly, non-artificial intelligence also contributes to the achievement of innovativeness in new products (Sharifi & Palmeira, 2017).

By now, research has thrown light only a few factors that affect the success of new products. Several organizational areas that influence the success of new products, are still need to be explored. The basic objective of this study is to fulfil this research gap. This study has been conducted to provide a baseline for those business organizations which are still ignorant of the vital importance of artificial and non-artificial intelligence for the success of new products with the provision of empirical evidence from manufacturing companies working in China.

2. Literature review

Several factors contribute to the success of new products. Some of them are explored by the researchers in relation to the success of new products. There are some other factors which also impart influences on the introduction and successful marketing of the new products. But unfortunately, these factors have not yet been gone through analysis and discussion. This paper is an attempt to cover this gap by exploring these factors including the previous under two main heads artificial and non-artificial intelligence. This study provides a remarkable theoretical framework, with empirical evidence from manufacturing companies in China, to motivate the implementation of artificial and non-artificial intelligence for new product success. The recent investigation in the operational and organizational performance of manufacturing companies in China shed light on the fact that the implementation of artificial and non-artificial intelligence (individual personality intelligence and team intelligence) brings innovativeness in the production of new products and in this way, makes them successful in the market.

2.1 Artificial Intelligence

Technical Infrastructure Quality

According to Kuusela, Bowman, Amacher, Howarth, and Laporte (2020), infrastructure plays a crucial role in the companies' performance. The technical infrastructure quality brings improvement in the production of new items in different manners. The technical infrastructure quality circulates essential and up-to-date information in time in the form of the quality based communication network within and outside the organization (Nadiri, Nandi, & Akoz, 2018). The information acquired by the quality communication network is used to enhance the quality of operational and production procedures. Up-to-date information helps to produce and advertise new

products successfully (Patyal & Koilakuntla, 2015). The technical transportation system contributes to the new product success as it facilitates to acquire quality material for even far-off areas a, and to deliver new products minimum time in the market (Tsalidis et al., 2017). The better quality electric system and production technology bring improvement in the quality of new products and thus contribute to the success of new products (March & Scudder, 2019). In China, the manufacturing companies which have technical high-quality based infrastructure enjoy the opportunities for competitive advantages, by producing new innovative products and selling them successfully in the market. The technical quality-based organizational infrastructure provides the personnel with a peaceful work environment, which motivates them to work by heart in the operational and production processes (Jasti & Kodali, 2016). Technical infrastructure quality contributes to the success of new products in this way also. Based on the above-mentioned discussion we hypothesize:

H1: Technical infrastructure quality has a positive association with new product success in the manufacturing companies in China.

2.2 Management capability

Management capability is a management approach in a manufacturing organization that employs a collection of dynamic capabilities in the organization to raise the rate of revenue in the market and the position among rivals (Alaarj, Abidin-Mohamed, & Bustamam, 2016). The management capability approach seeks to employ a stock of critical core competencies to raise the position of firms in the industry and enhances the rate of profitability (Akram, Siddiqui, Nawaz, Ghauri, & Cheema, 2011). The management capability approach is based on the resource-based view (RBV) but it is an extension to the resource-based view (RBV). RBV implies that non-imitable, valuable, uncommon, and heterogeneous resources should be organized efficiently to deploy them optimally for better quality products (Hemmati, Feiz, Jalilvand, & Kholghi, 2016). The management capability approach senses the market shifts, changes in customer's preferences, and production technologies, and enables the firms to respond to them. It brings alternatives in organizational resources, in technology, and the production procedures to cope with the emerging market requirements (Helfat & Peteraf, 2015). It reconfigures, integrates, and collaborates human resources, physical resources, and operational and production procedures, according to the changing circumstances. The management capability approach brings improvement in the products, it enables the organizations to introduce new products in the market and make them successful among the organizational competitors. Thus, it can be hypothesized:

H2: Management capability is positively associated with new product success in manufacturing companies in China.

2.3 Personnel Expertise

This paper sheds light on the impacts of personnel expertise on the new product success. Personnel expertise includes several cognitive, technical, analytical, and motivational skills. Personnel of any business organization are periodically trained, to create new skills in them and improve the existing skills to enable them to perform actively and efficiently in the organizational and production procedures (Popkova & Zmiyak, 2019). The analysis of the personnel expertise in the manufacturing companies in China represents the considerable significance of the personnel expertise in the successful marketing of the products. in the opinion of Batra and Vohra (2016), the personnel who have cognitive skills can understand the environmental and marketing circumstances and can act accordingly. Technical skills enable them to run up-to-date production procedures and innovative technology. Problem-solving and teamwork skills in the personnel make them able to detect risks and problems in the operations, production of goods, and marketing and remove them efficiently. The reduction of risks and problems ensures improvement in the quality of products and promotes the success of new products. Therefore:

H3: Personnel expertise has a positive relationship with the success of new products in the manufacturing companies in China.

2.4 Non-Artificial Intelligence (Individual Personality Intelligence)

Emotional Intelligence

Mattingly and Kraiger (2019) are of the view that emotional intelligence (EI) is the capability of individuals in a business organization to identify their own emotions and the emotions of others, detect discrimination between the two. The purpose is to adjust personal emotions to behave, think, and manage according to others' emotions and environment to achieve organizational goals (Magnano, Craparo, & Paolillo, 2016). In

organizations, emotional intelligence was first introduced in 1964 but it gained popularity in 1995 in "Emotional Intelligence (EI)" a book written by Daniel Goleman, a science journalist. The EI establishes a connection between self-experiences and those of others. The individual personnel in business organizations judge the emotions of stakeholders especially those of customers and adjust their own emotions to act accordingly to meet the customers' expectations. The trait intelligence model was developed by Konstaninos v. peterides in 2001, it addresses the capability to judge the dispositions to perceive self-emotions and those of others. On the other hand, there is the ability intelligence model presented by Peter Salovey and John Mayer in 2004 that provides the ways to the individuals to process the emotional information to bring changes in the organizational strategies and functions to meet the emerging demands. Kearney et al. (2017) has argued that emotional intelligence is key to the success of existing and new products as it adjusts the thinking and behaviour of the workforce in accordance with the customers' requirements.

H4: Emotional intelligence (EI) is positively associated with new product success in manufacturing companies in China.

2.5 Spiritual Intelligence

The paper is one of the initial attempts to shed light on the influences of spiritual intelligence on achievement in the marketing of new products. The term was first presented by Danah Zphar in her book rewiring the Corporate Brain in 1997. In the beginning, this term was just confined to a religious perspective. Only a few scholars like Ken O' Donnell and Steven Benedict 2000 have shown its use in the organizations. This study is also an attempt in the same line as it tries to the considerable significance of spiritual intelligence in the successful marketing of new products. It creates self-awareness in individuals. It motivates individuals to ponder upon what they believe in and what they value (Kaur, Sambasivan, & Kumar, 2015). Spiritual intelligence motivates the personnel to perform their functions considering moral values (Mahmood, Arshad, Ahmed, Akhtar, & Khan, 2018). It teaches them to value others despite their differences and to have honest and fair relationships with the colleagues, customers' and other stakeholders that put favourable impacts on the business operations, production, and marketing (Ramachandaran, Krauss, Hamzah, & Idris, 2017). It creates a sense of responsibility, and goodness to the organization, society, and stakeholders as well. This sense of morality, goodness, and responsibility motivate the personnel to play fairly in business organizations. The tendency of spiritual intelligence is getting on in the personnel of manufacturing companies in China. The companies having strong spiritual intelligence in their personnel enjoy a high position among rivals while introducing new products in the market. The tendency of spiritual intelligence in the personnel minimizes the chances of fraud and cheats as it motivates the personnel to perform their functions honestly in the organization (Amirian & Fazilat-Pour, 2016). Spiritual intelligence helps to diminish discrimination and disputes among personnel by developing fair relations and provides a peaceful atmosphere for the workforce. In a favourable atmosphere, employees perform actively and wholeheartedly that imparts a good influence on the manufacturing of better quality products, and lead to the success of new products (Ward, Duray, Leong, & Sum, 1995). Thus, the present study has developed the following hypotheses:

H5: Spiritual intelligence in personnel is positively associated with new product success in the manufacturing companies in China.

Non-Artificial Intelligence (Team Intelligence)

2.7 Information Processing Capability

As stated by Akhtar, Khan, Tarba, and Jayawickrama (2018) information processing capability contributes much to the production quality and marketing success of existing as well as new products. Through the lens of information processing capability, this paper examines the new product success in the manufacturing companies. Efficient information processing capability enables the manufacturing organizations to acquire relevant, appropriate, valid, and enormous information in a cost economic and timely manner. Information processing capability leads to more effective communication and quick decision making, which proves to be a key to new product success. The capability to process the acquired information is considerably enhanced through the application of effective information systems. Sound information processing capability is needed to cope with the shifts of the market, uncertainty in business competition, and customers' preferences. This efficient processing of information brings innovation in the production procedures, advertisement, and marketing of products, which also leads to the success of new products in the market.

H6: Information processing capability is positively associated with new product success in

the manufacturing companies in China.

2.6 Responsiveness Capability

There occur shifts in the market environments, quality of goods, strategic trends of competitors, and customers' demands. Considering these shifts there is a need for core capability to minimize 'time to market' for the development of products and their successful marketing. The prevailing certainties in the business environment give away to a turbulent and uncertain future business environment where firms' capability to respond to changing events will prove to a key to the success of new products. The responsiveness capability has become an emerging and potential competence for the manufacturing companies. Responsiveness capability is the ability to react timely and purposefully to competitive opportunities, business and market events, and threats from the external environment to achieve a competitive advantage in introducing and marketing new products. Sound responsiveness capability improves the quality of production, reduces lead time, and creates customers' satisfaction thus provides a way to the success of new products. Therefore:

H7: Responsiveness capability has a positive relationship with new product success in the manufacturing companies in China.

2.8 The Mediating Role of New Product Innovativeness

The innovativeness in the production of new goods is considered necessary for the marketing success of exiting products, introducing new products in the market, and making them according to customers' preferences. Customers prefer to purchase higher quality innovative products that meet their needs with the facility. The artificial as well as non-artificial intelligence ensures innovativeness in the production of new goods and innovativeness in new products and makes them successful among the products of competitors in the market. Artificial intelligence facilitates the communication network, transport system, technology, and electric system which is beneficial to create innovation in minimum time and low cost. Management capabilities reconfigure and integrate human and physical resources in a way to respond to the emerging requirements about the quality of products. Personnel expertise brings innovativeness in the new products with the ability to handle problems, minimize defects, and utilizes up-to-date techniques and technology for production. Non-artificial intelligence (individual personality intelligence and team intelligence) to bring innovativeness in new products with the emotional and spiritual satisfaction of the customers by adjusting the personnel emotions and morality according to those of stakeholders. Team intelligence acquires and process relevant, timely, appropriate, and adequate information about shifts in the business environment and customers' demands and respond to these shifts and changes, bringing innovativeness in the products. The analysis of the performance of the manufacturing companies in China proves that artificial intelligence and non-artificial intelligence brings improvement in manufacturing new products that further facilitate new product success in the market. Thus, we can hypothesize as:

H8: New product innovativeness is positively linked with new product success in the manufacturing companies in China.

H9: New product innovativeness positive mediated among the links of artificial and non-artificial intelligence and new product success.

3. Research Methods

The present study aim is to investigate the role of artificial intelligence along with non-artificial intelligence on the new product success of the manufacturing organization in China. The examination of the mediating role of new product innovativeness among the nexus of artificial along with non-artificial intelligence and new product success also included in the goals of the current study. The simple random sampling has been used by the study to select the respondents while data has been gathered by using questionnaires from the research and development department of manufacturing companies in China. The data was gathered from managerial level employees working in production and operation management department moreover quality management personnel were also considered in sample papulation. These questionnaires have five-point Likert scale in which 1 for strongly disagree, 2 for disagree, 3 for neutral, 4 for agree and 5 for strongly agree. The personal visit method has been used to distribute the surveys to the respondents. A total of 390 questionnaires has been forwarded to the respondents but after one month only 295 questionnaires received that represents about 75.64 percent response rate. The smart-PLS was used for analysis purpose due to the complexity of the framework and the purpose of the study is to predict the constructs (Hair, Ringle, & Sarstedt, 2011). Smart-PLS version 3.0 was preferred to estimate the algorithm and bootstrap performance

under 5000 sub-sample. Smart-PLS favored due to simultaneous analysis capacity. PLS-SEM is based on dual stage estimation approach based of measurement and structural model assessment. The algorithm process estimates the measurement model assessment and bootstrapping confirms the direct and indirect relationship among variables.

The constructs that have been used by the present study include the seven predictors such as technical infrastructure quality (TIQ) has seven items (Rengkung, Rahayu, & Hussein, 2017), management capability (MC) also has seven items (Mao, Liu, Zhang, & Deng, 2016), personal expertise (PE) has three items (Bhagat & Sambargi, 2019), emotional intelligence (EI) that also has three items (Maqbool, Sudong, Manzoor, & Rashid, 2017), spiritual intelligence (SI) has five items (Marghzar & Marzban, 2018), information processing capabilities (IPC) eight items (Akhtar et al., 2018) and responsiveness capabilities (RC) that has four items (Singh, Charan, & Chattopadhyay, 2019). In addition, new product innovativeness (NPI) has been used as the mediator that has four items (Truong, Klink, Simmons, Grinstein, & Palmer, 2017). Finally, the new product success (NPS) has been used as the predictive variable in the study that has three items (Thornton, Henneberg, Leischnig, & Naudé, 2019). These constructs along with their links are shown in Figure 1.

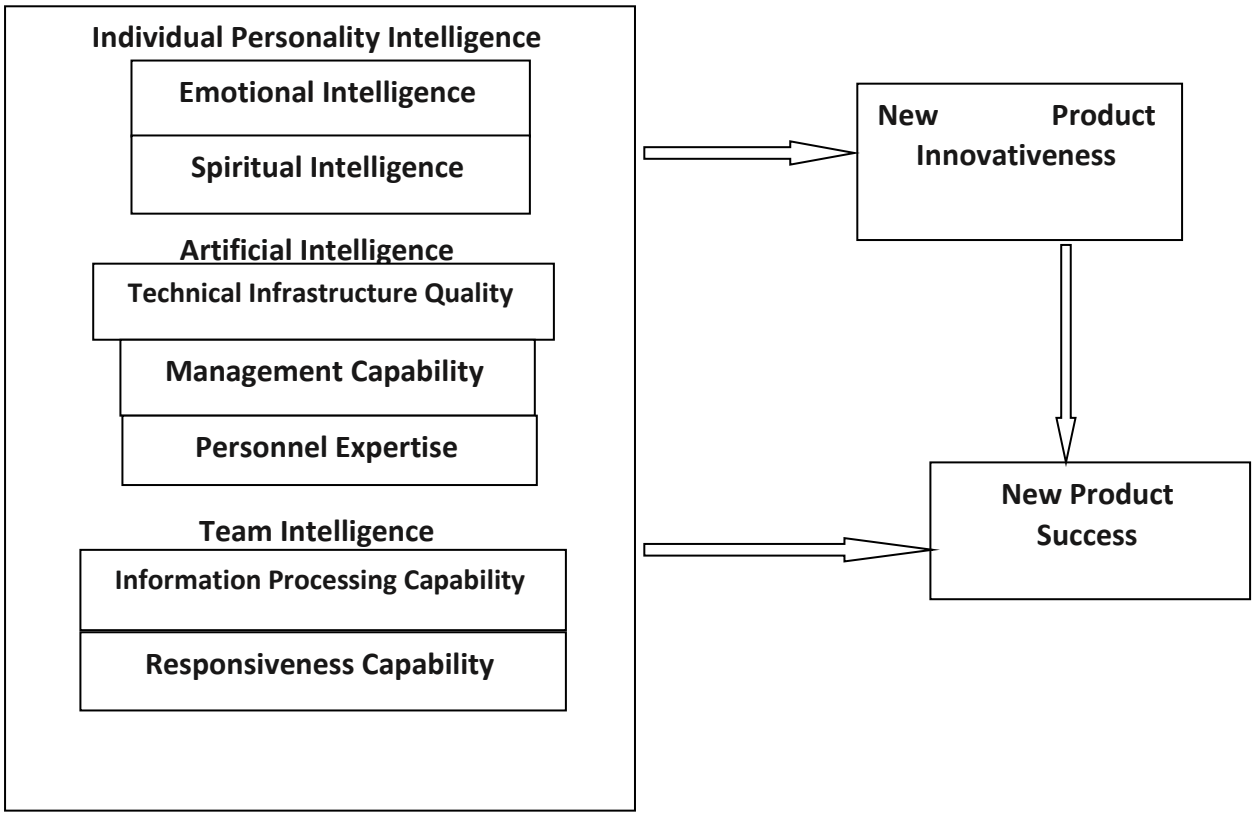

Figure 1. **Theoretical Framework**

4. Findings

The cutoff points for measurements i.e. factor loading, CR, Cronbach alpha and AVE are above baselines emphasized by (Sarstedt, Ringle et al. 2017). There have been multiple thresholds for factor loadings (Ford, MacCallum et al. 1986, Hair, Anderson et al. 2010, Sarstedt, Ringle et al. 2017). Authors preferred the .70 cutoff point recommended by (Sarstedt, Ringle et al. 2017) of except for MC6, MC7 and MPI2 followed (Hair, Anderson et al. 2010) .50 due to lower factor loading values.

The findings firstly exposed the convergent validity that describes the nexus among the items and the figures show that values of Alpha along with CR are larger than 0.70 and values of AVE along with loadings are not less than 0.50. These are the indication of valid convergent validity and high nexus among items. These values are mentioned in Table 1. The thresholds points for CR, Cronbach alpha is 0.70 and AVE must be greater than of 0.50 value (Sarstedt, Ringle et al. 2017).

Table 1. **Convergent Validity**

Constructs	Items	Loadings	Alpha	CR	AVE
Emotional Intelligence	EI1	0.925	0.878	0.925	0.804
	EI2	0.857			
	EI3	0.905			
Information Processing capabilities	IPC2	0.836	0.869	0.900	0.601
	IPC3	0.724			
	IPC4	0.726			
	IPC6	0.787			
	IPC7	0.766			
	IPC8	0.805			
Management Capabilities	MC1	0.785	0.802	0.865	0.565
	MC2	0.838			
	MC4	0.823			
	MC6	0.624			
	MC7	0.662			
New Product Innovativeness	NPI1	0.795	0.773	0.804	0.512
	NPI2	0.521			
	NPI3	0.733			
	NPI4	0.779			
New Product Success	NPS1	0.782	0.827	0.898	0.747
	NPS2	0.909			
	NPS3	0.896			
Personal Expertise	PE1	0.856	0.775	0.821	0.605
	PE2	0.758			
	PE3	0.712			
Responsiveness Capabilities	RC1	0.802	0.840	0.893	0.676
	RC2	0.839			
	RC3	0.833			
	RC4	0.815			
Spiritual Intelligence	SI1	0.875	0.887	0.918	0.691
	SI2	0.821			
	SI23	0.880			
	SI4	0.846			
	SI5	0.725			
Technical Infrastructure Quality	TIQ1	0.895	0.931	0.945	0.742
	TIQ2	0.892			
	TIQ3	0.823			
	TIQ5	0.793			
	TIQ6	0.872			
	TIQ7	0.887			

Table 2. **Discriminant Validity**

	EI	IPC	MC	NPI	NPS	PE	RC	SI	TIQ
EI									
IPC	0.393								
MC	0.358	0.679							
NPI	0.199	0.684	0.607						
NPS	0.325	0.791	0.742	0.700					
PE	0.272	0.593	0.545	0.697	0.691				
RC	0.374	0.728	0.659	0.727	0.717	0.737			
SI	0.330	0.701	0.612	0.677	0.648	0.611	0.838		
TIQ	0.317	0.580	0.419	0.296	0.439	0.421	0.436	0.609	

The findings secondly exposed the discriminant validity that describes the nexus among the constructs and the figures show that values of Heterotrait Monotrait (HTMT) ratios are not higher than 0.90. These are the indication of valid discriminant validity and no high nexus among variables. These values are mentioned in Table 2.

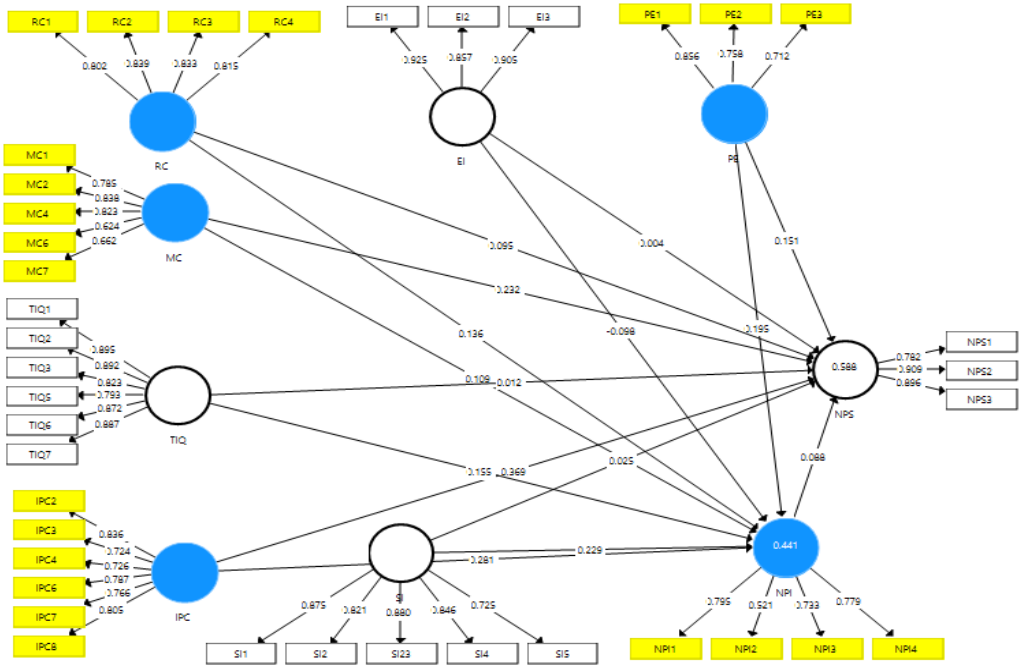

Figure 2. **Measurement Model Assessment**

The path analysis exposed that all the dimensions of artificial and non-artificial intelligence have positive nexus with the new product success and new product innovativeness expect the emotional intelligence dimension of non-artificial intelligence. These are the indication of acceptance of H2, H3, H6, H7 and H8 while the rejection of H1, H4 and H5 because insignificant links among the emotional and spiritual intelligence, technical infrastructure quality and new product success. These links are highlighted in Table 3.

Table 3. **Direct Relationships**

Relationships	Beta	S.D.	t-statistics	p-values	L.L.	U.L.
EI -> NPI	-0.098	0.028	3.555	0.001	-0.143	-0.042
EI -> NPS	0.004	0.027	0.142	0.887	-0.052	0.057
IPC -> NPI	0.281	0.045	6.267	0.000	0.203	0.360
IPC -> NPS	0.369	0.039	9.560	0.000	0.303	0.444
MC -> NPI	0.109	0.036	3.068	0.003	0.046	0.182
MC -> NPS	0.232	0.030	7.793	0.000	0.179	0.286
NPI -> NPS	0.088	0.033	2.703	0.008	0.025	0.140
PE -> NPI	0.195	0.042	4.651	0.000	0.116	0.282
PE -> NPS	0.151	0.036	4.170	0.000	0.076	0.224
RC -> NPI	0.136	0.051	2.684	0.009	0.039	0.222
RC -> NPS	0.095	0.041	2.339	0.021	0.007	0.166
SI -> NPI	0.229	0.049	4.683	0.000	0.127	0.310
SI -> NPS	0.025	0.042	0.604	0.547	-0.070	0.101
TIQ -> NPI	0.155	0.038	4.095	0.000	0.088	0.217
TIQ -> NPS	0.012	0.030	0.397	0.692	-0.057	0.064

The path analysis also exposed that the new product innovativeness positive mediating among the links of all the dimensions of artificial and non-artificial intelligence and new product success. These are the indication of acceptance of H9 because the beta has positive sign along with t-values higher than 1.64 and p-values less than 0.05. These links are highlighted in Table 4. The indirect effects are supported and confirmed the partial mediation effect since the direct effects are positively associated.

Table 4. **Indirect Relationships**

Relationships	Beta	S.D.	t-statistics	p-values	L.L.	U.L.
EI -> NPI -> NPS	0.009	0.004	2.361	0.020	0.014	0.002
IPC -> NPI -> NPS	0.025	0.011	2.340	0.021	0.006	0.048
MC -> NPI -> NPS	0.010	0.004	2.170	0.032	0.002	0.019
PE -> NPI -> NPS	0.017	0.007	2.593	0.011	0.003	0.029
RC -> NPI -> NPS	0.012	0.006	1.942	0.055	0.002	0.022
SI -> NPI -> NPS	0.020	0.009	2.228	0.028	0.006	0.035
TIQ -> NPI -> NPS	0.014	0.006	2.307	0.023	0.004	0.025

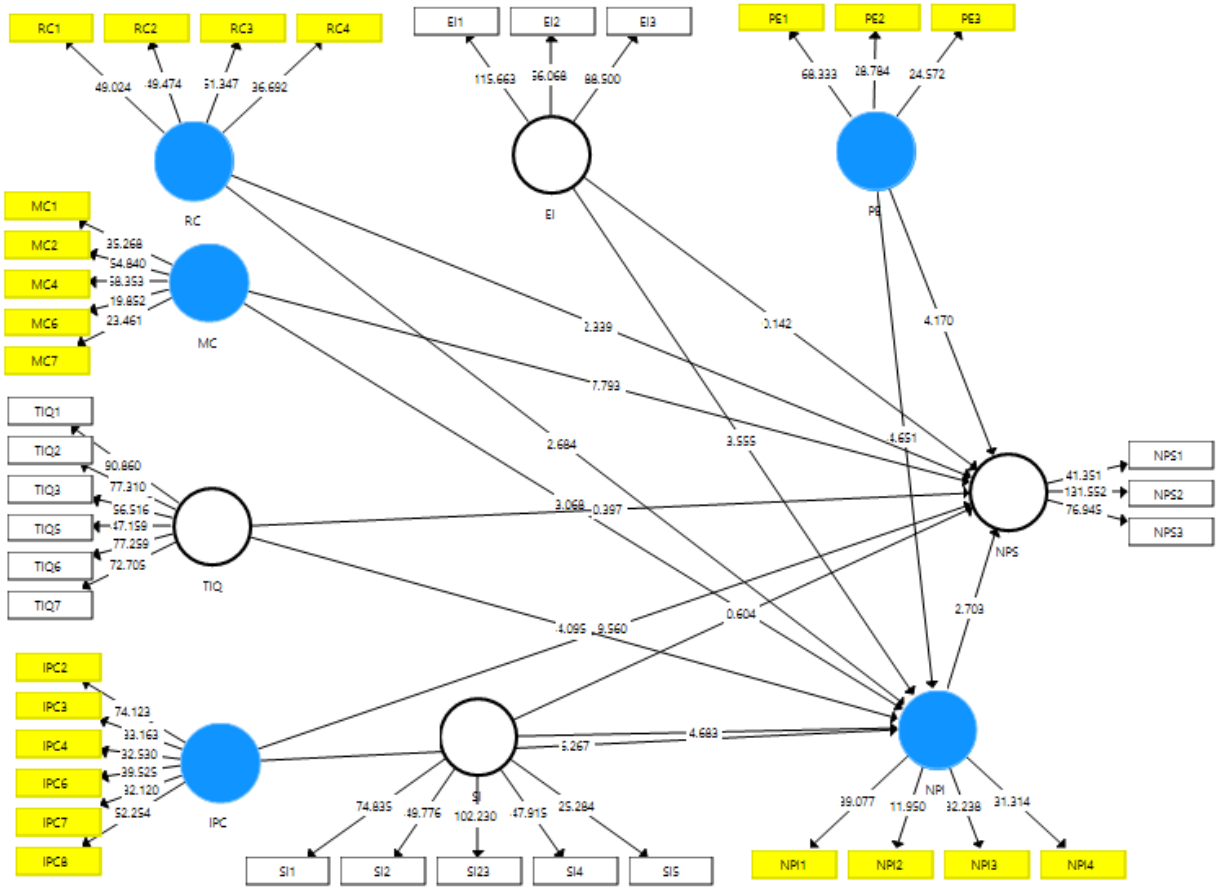

Figure 3. **Structural Model Assessment**

5. Discussions and Implications

The results revealed that artificial along with non-artificial intelligence has a positive association with the new product success of the organization. These outcomes are similar to the research findings of Soltani-Fesaghandis and Pooya (2018) who also exposed that artificial intelligence has played an essential part in the success of the new product of the organization. In addition, a study conducted by Yoon and Lee (2018) examined that the new product success always depends on the favourable use of artificial intelligence within the organization and could be in line with the current study outcomes. Similarly, the non-artificial intelligence

has a positive association with the new product success of the organization and this is also matched with the findings of Cross (1999) who also elaborated that the non-artificial intelligence has also a significant impact on the new product success of the company. The results also show that new product innovativeness positively mediating among the links of artificial and non-artificial intelligence and new product success of the manufacturing organizations in China and these outcomes are in line with the output of Hetet, Ackermann, and Mathieu (2019) who also exposed that product innovativeness is the essential element for the product success of the firm. In addition, a study by Chao, Reid, and Hung (2016) analyzed that the product success always depends on the product innovativeness along with artificial intelligence that is adopted by the company while developing the new product and this could be in line with the outcome of ongoing study. These findings have provided the guidelines to the regulation-making authorities that they should develop the regulation that promote the artificial as well as non-artificial intelligence in the organization that has played a vital role in the success of the organization. In addition, this study also helpful for the upcoming studies who want to investigate this area in future.

6. Conclusion and Limitations

Finally, the present has concluded that the manufacturing firms in China have adopted the effective artificial along with non-artificial intelligence that is the reason for high product success in the market. In addition, the conclusion includes that the product innovations feature has also existed in the development of the new product of manufacturing companies in China that is one of the foremost factors of new product success in the market. However, this study has some limitations that are the directions for the upcoming studies such as the present study has ignored the other industry than the manufacturing industry and suggested that future studies should adopt the other industry while investigating this area in future. In addition, the present study also ignores the cross-country analysis and taken only the Chinese manufacturing companies and recommended that future studies should add more countries in their analysis. Finally, the ongoing study ignores the moderating role in the framework and recommended that future study should incorporate this aspect in their studies.

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