The Forthcoming Revolution of Artificial Intelligence and its Impacts on Pharmacy Business in Thailand

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ABSTRACT
The prime aim of the paper is to investigate the forthcoming revolution of artificial intelligence and its impact on the performance of the pharmacy business in Thailand. The aim of the study also includes the nexus among the factors regarding the revolution of artificial intelligence such as development in system, incentive achievements, innovation and utilization and work designs on firm performance. The data for analysis were gathered from the pharmacy business in Thailand and PLS-SEM was used to test the validity and hypotheses of the study. The outcomes indicated that all the factors regarding the revolution of artificial intelligence such as development in system, incentive achievements, innovation and utilization and work designs, have positive nexus with firm performance.

The study gives the guideline to the policymakers that they should enhance their focus on the implementation of artificial intelligence in the organization that improves the performance of the institutions.
Key words: Development in System, Incentive Achievements, Innovation and Utilization, Work Designs, Artificial Intelligence, Firm Performance

INTRODUCTION

Two decades before, the artificial intelligence (AI) that was given the impression of a logical, creative mind is present in the approach of the humankind notwithstanding this by the following twenty years some other anecdotal advancements like auto-drive vehicles will be accessible for general use. However, it isn't workable for any machine to perform even in examination with the worst horse - in regards to administrations to convey individuals as well as merchandise through an incredible city mix and group (Brynjolfsson, Rock, & Syverson, 2017). By saying that, one would never have even conceived, in his most unpleasant creative mind, programmed autos, planes without pilots, Calls on Skype, Super PCs, cell phones or scholarly robots. Truly anticipating of the AI innovation future without falling is a definitive test. The test is to sensibly foresee expected AI innovations without falling into a similar foolish snare of ask and others, inclusive my 1995 research article, incapable of understanding the earth-shattering, no direct progressions of fresh advancements. Usually, two perceptions are there to be made (Bechtsis, Tsolakis, Vlachos, & Srai, 2018).

Initially, the duration of 190 years is a small duration by authentic measures. During this stated duration, we moved from horses being simply the significant wellspring of conveyance driving vehicles and from the matching device and slid rules to amazing personal computers placed easily inside our smart pockets, bags etc. Besides, time length falls among mechanical developments, and they are down to earth, far-reaching usage is on a continuation basis being decreased (He et al., 2019). Like, it took over 200 years from time new built-up principal function of the motor on steam in 1707 to when fabricated by (HF) Henry Ford a dependable and reasonable vehicle in the year 1908. It took the duration over the 90 years

between the time power was presented and it is widely used by organizations to considerably enhance industrial facility efficiency (Komninos, 2015). It took 20 years, be that as it might, in between ENIAC, primary PC, and 360 frameworks of IBM's that was not only mass-created and also reasonable by littler business organizations, although it took just ten years in 1973. It's all about when Martin Cooper (MC) prepared the first portable call from a handheld gadget and it is an open report by Motorola. The most fastest and greatest progress, notwithstanding, occurred with cell phones which initially showed up in the year 2002 and saw an excellent developer with advent of new forms having considerable upgrades each a couple of years by any semblance of Samsung, Apple and a few new Chinese firms (Hengstler, Enkel, & Duelli, 2016). Cell phones, notwithstanding their specialized highlights, presently join computerized reasoning qualities that incorporate getting discourse, giving modified guidance is communicated in language, finishing words when composing a book and a few different capacities requiring implanted AI, gave through a pocket-size PC littler in sizing like a cigarettes pack (de la Paz-Marín, Campoy-Muñoz, & Hervás-Martínez, 2012).

The indoor regulator is a straightforward mechanical gadget showing some crude yet incredibly significant kind of knowledge by keeping the existing temperatures consistent at the particular ideal, pre-settled level. In addition, the PCs shrewd to the maximum level to settle on incredibly muddled choices considering an enormous number of elements and choice criteria, yet like indoor regulators such choices are pre-customized and dependent on rationale, on the off chance that decides and the trees by choice that produce precisely the similar outcomes, as long the information directions are also similar. PCs significant favorable position is its fast speed that makes them enable to perform not only millions but also

billions of guidelines during every next second (Helbing, 2019). Artificial intelligence, then again, goes above and beyond by not just applying pre-modified choices, yet instead of showing some learning capacities. The perusing of manually written digits by the neural net gadget in the year of 1990 an ancestor of endeavors to complete the learning (Yu, Yu, Wang, Yuan, & Ji, 2016).

The equivalent applies for Polly that could quickly figure out how to articulate different words or ASIMO that could be explored in the open spots continually changing natural arrangements, rendering prearranging challenging to represent every single imaginable case. ASIMO's choices were very not quite the same as those of the incredibly quick super-computer Deep-Blue that also utilized "beast power" to distinguish and also investigate up to 60 Billion attempts inside the brief time frame permitted to chess players to make their best course of action. Dark Blue was unequipped for learning as its writing computer programs depended on the rationale, on the off chance that choice trees and also rules which implied that it could not acquire and also commit similar errors again and again (McArthur, Lewis, & Bishary, 2005). The Watson PC narrative beating two best contenders of Jeopardy's progressively is confused, since retrieving the suitable answer among the two hundred million data pages put away in its storage is not a positive knowledge sign of like depending on the quick velocity it has to recover data in short time. Correspondingly, it's an indication of the insight to advance its presentation by "playing 100 games against past victors". A few stages communicated in English by Watson towards AI by having the option to comprehend communicated in the English language and gain from his mix-ups (McArthur et al., 2005).

The percentage of the patent of artificial intelligence hold by the IEEE was 34 percent from 1997 to 2017. Moreover, SPIE has 8 percent of the patent of artificial intelligence during 1997-2017. In addition, the percentage of the patent of artificial intelligence hold by the RELX was 11 percent from 1997 to 2017. Furthermore, SPRINGER has 4 percent of the patent of artificial intelligence during 1997-2017. Similarly, the percentage of the patent of artificial intelligence acquired by the RSJ was 2 percent from 1997 to 2017. Finally, the percentage of the patent of artificial intelligence that is acquired by all other institutions was 40 percent from 1997 to 2017. Figure 1 is presented below highlighted the percentage of the patent of artificial intelligence acquired by the different institutions during 1997-2017.
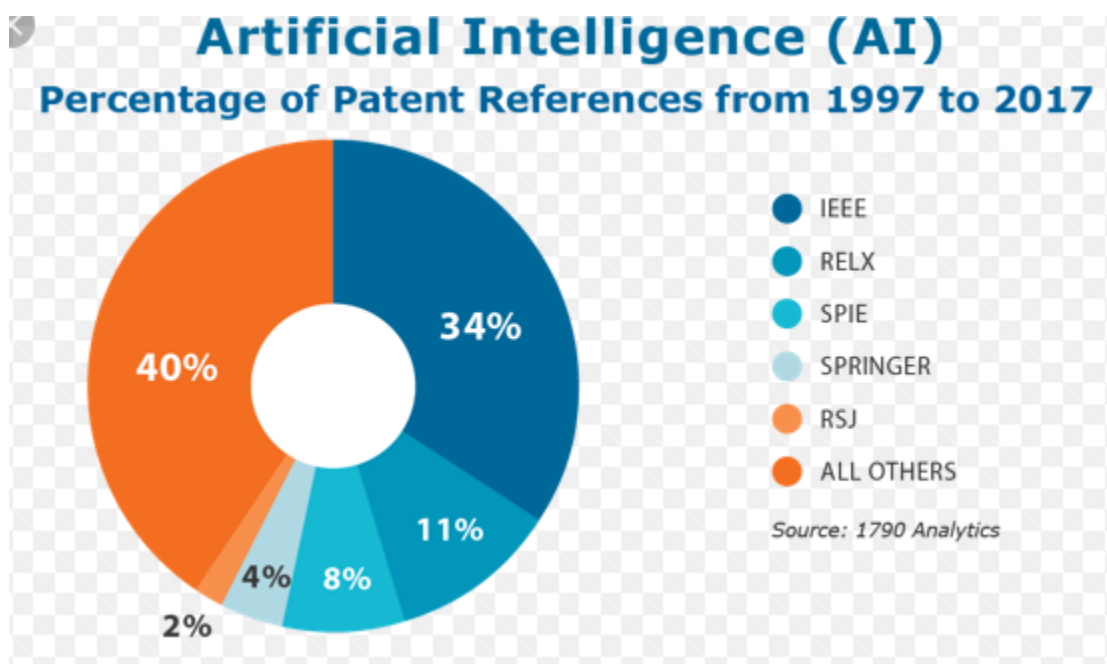

Figure 1: *Percent of Patent about Artificial Intelligence Acquired by various Institutions*

LITERATURE REVIEW

By definition, Insurgencies are related along with significant changes. The industrial one brought the large, mechanical organization that abused machine substitute intensity, enhance and also enhance the people performed manual work, expanding efficiency impressive and offering moderate items to shoppers, essentially increasing the size of the market just as expectations for everyday comforts (Klintong, Vadhanasindhu, & Thawesaengkulthai, 2012). The advanced transformation abused the intensity of PCs to replace, enhance and intensify the routine psychological assignments done by people additionally improving efficiency and addition of further to discounted costs. Recently referenced, the AI upset expects to substitute, enhance and intensify all errands presently performed by people, getting in actuality, just because, a genuine contender for them. Tolerating this reality of the watershed, putting apart reactions about the AI like those which were collected against the internet in the year 1995

against (1995-Stoll), then tolerating our folly-to-foresee striking, innovative developments, I will endeavor, by the by, to anticipate the predominant firm quite a while from now and ahead the necessary move-in work (Tseng & Ting, 2013). From the four advanced organizations in the year, 1995 recorded in two (Google Incorporation and Facebook) were not in any case established, age of Amazon was only one year old while Apple aged nine years old yet in state of budgetary grave, with just a 0.4 dollar billion benefit in that year and also lost 0.8 dollars and 1 dollar in billion out of 1996-1997. Although it looks unrealistic, in this way, to have predicted in the year 1995 that the marketplace capitalization of these four organizations would be near 1.9 dollars in trillion (its more than the Gross Domestic Product of the 120 most unfortunate countries on the planet) or that their market top-per employee would be dollar 4.13 million (Pesapane, Codari, & Sardanelli, 2018).

So, no exact method is there too right now foresee the prevailing, fruitful of 2037 organizations or the basic variables prompting such accomplishment as it was looking hard to do as such in the year 1995. Achievement of the variables can be considered here by us the four computerized organizations and endeavor for their extrapolation, expecting that they might, in any case, remain constant between now and 2037 (Wang, Chau, Cheng, & Qiu, 2009). As a matter of first importance, every one of the four organizations has been very inventive, each of them in its remarkable way. Additionally to this, second, the internet was utilized by all of them in a very successful way to give their administrations, sell their items and rationalize their errands. Third, their effectiveness in contracting top ability and spur their top representatives with a lovely workplace, significant compensations and liberal investment opportunities. At last, these four firms have developed essentially by gaining different organizations, frequently encouraging new companies in the specific territories they need to extend or achieve skill (Binner, Gazely, & Kendall, 2008). Strangely none of these four qualities can be computerized or become some portion of a calculation, at any rate during the following twenty years. In my view, they will keep on staying basic components for prevailing later on and will depend extraordinarily on individuals' choices and activities to execute them. Moreover, calculations should be altered as focused, market, condition and different elements will be changing and just people will have the option to recognize when such changes have happened (something else, the calculations will be broken). Beneath every one of these four achievement factors is examined in further detail (Brynjolfsson et al., 2017).

Inventive achievements and Firm Performance

There are various sorts of development from minor, negligible ones to unmistakable leaps forward as those actualized by the four advanced firms. There are various books and articles expounded on imaginative leaps forward alike Google search or also the iPhone and how they have altered the global world and carried wealth to those that designed them. In any case, what must be comprehended is that such achievements are uncommon and just recognized all things considered sometime later (Zwick, Frosch, Hoisl, & Harhoff, 2017). In a more established however captivating book about leaps forward, its writers inferred that there was only one normal

quality of all the 16 cases they contemplated. No one accepted that they would be effective, encouraging their designers to quit burning through their time and friends' assets. These leaps forward succeeded simply because of the steadiness of their creators that didn't surrender in spite of all hardship. They proceeded with their improvement frequently in their specific extra time (Bonaccorsi & Thoma, 2007).

The estimation of leaps forward is difficult to acknowledge as they include shiny new applications individuals are inexperienced with, the estimation of which they can't comprehend, or don't accept as in fact conceivable similar to the case with fiber optics. Indeed, even the estimation of Google search was not clear in the late 1990s as it can be bore witness to by the way that its designers couldn't sell it at the soliciting cost from dollar 1.6 million. It can't be guaranteed that by distinguishing fascinating imaginative thoughts, they will transform into financially effective applications (Shimizu & Hoshino, 2012). The street is long and brimming with dangers the most significant number of things can turn out badly, including mechanical issues, failure to guarantee adequate financing, contenders creating comparable thoughts and potential postponements until individuals understand their significance and choose to utilize them. Besides, it merits referencing that the incredible dominant part of imaginative ideas doesn't prevail in a meaningful manner, that new contenders can improve the first thought and catch pieces of the overall industry and that numerous creations can get out of date by increasingly novel ones regularly presented by carport new companies (see underneath). Imaginative decimation is at the core of market economies and the significant supporter of efficiency increments just as the offering of a more prominent decision of item/administrations to shoppers. No solid counsel on the most proficient method to improve, also accomplish leaps forward, can be given past saying that a few associations are superior to other people, at any rate for some timeframe, in making the correct condition to develop advancement and endeavor its advantages. It must be accentuated, along these lines, that achievement is erratic and that the more significant the inventive thought the harder it is to imagine and execute. In this manner, it is impossible that creative leaps forward can be anticipated algorithmically during the following 20 years, if at any point (Griliches, Pakes, & Hall, 1986). Thus, according to past studies inventive achievement has a positive association with firm performance and this study also made the following hypothesis:

H1: There is positive nexus among the inventive achievement and performance of the pharmacy business in Thailand.

Innovations & Utilization and Firm Performance

The advanced upset has given critical profitability upgrades to the back office tasks of firms and enabled customers to purchase products and enterprises online without having to go to a store or office physically. In the process, it has wiped out countless tedious mental undertakings performed by individuals and moved work designs. This is clear in Table 3 by looking at the quantity of representatives among advanced and customary firms. For example, the quantity of workers of Walmart is more than multiple times higher than that of the other retailer Amazon, while the incomes of the previous is just 4.5 higher than the last mentioned, indicating the incredible

efficiency enhancements being acknowledged by Amazon's successful use of computerized advances, and the Internet (Komninos, 2004). Almost certainly, the AI transformation will proceed or even quicken that example, further improving efficiency and lessening work with certain organizations being more effective than others by abusing rising innovations and contributing significant aggregates to do as such. The uniqueness of the AI innovations is their capability to enhance, substitute and enhance all assignments as of now performed by people with basic ramifications for firms that must accomplish critical profitability upgrades to remain aggressive, and yet raising the probability of expanded joblessness (Park & Kressel, 2018).

Extrapolating from the effect of the Industrial and advanced transformations, it appears that innovation has made a greater number of occupations than it was demolished even though there might be a transitional time of expanded joblessness until new open doors are made to serve the rising needs of those with expanded wages. The trouble would be in knowing which of the AI innovations would give the best advantages and deciding the ideal time to begin putting resources into them (Boukis, Pnevmatikakis, & Polymenakos, 2007). It is farfetched that such a speculation choice could be made algorithmically as it would require forecasts about the advantages and disadvantages of future and dubious advances. This implies top officials should think about the points of interest and disadvantages of the accessible speculation conceivable outcomes and make the last decision(s) critically utilizing all data within reach. Overseeing individuals: It is additionally almost certain that the pattern towards littler finance will proceed as AI innovations will quicken the quantity of errands that can be performed by machines and robots. The more occupations being computerized notwithstanding, the more noteworthy the abilities that would be required to sufficiently play out the rest of the assignments, for both the productive activity of firms just as for using AI and different advancements in the ideal manner (Allen, Ellis, & Petridis, 2010). This would require enlisting skilled representatives and persuading them to benefit from their presentation to accomplish and keep up upper hands over different firms. The significant differentiator would thusly originate from these experienced people imagining and executing creative thoughts and winning systems that would guide the association onto an effective way. Procuring, propelling and effectively overseeing capable people would likely be one of the most basic achievement aspects for any organization in the AI time. They will likewise be challenging to place in the calculation. Thus, according to past studies innovation and utilization has a positive association with firm performance and this study also made the following hypothesis:

H2: There is positive nexus among the innovation and utilization and performance of the pharmacy business in Thailand.

Development in System and Firm Performance

The advanced organizations have developed significantly by achievements, which similarly enabled them to have and verify crucial regions wanted mastery. Together they have procured more than four hundred organizations (2016-Whittick) with driving the route Google = 190, Apple = 82, Amazon = 67 and

Facebook = 62 (counting What's-App purchased for dollar 19 billion, one of the gigantic cost for beginning gone up with just fifty-five representatives and under-five year of age). Before, new mechanical innovations have on a fundamental level, influenced the incomes and gainfulness of firms and have become an essential achievement factor (Lau & Ngo, 2001). This example will proceed, if not quicken with AI advances making vulnerability for built-up firms in that capacity advances, or who will present them initially can't be anticipated. The colossal market capitalization of the organizations makes it simpler for those who secure new businesses which they deliberately will accept for their near future development by giving off more and more offers the case it is essential. They can keep up and additionally increment their monopolistic focal points, the future challenge in the process (Liu & He, 2005).

The research paper in 1995 indicated a non-stop decrease in the farming and assembling business and administrative developments. On the off chance that present patterns proceed with horticulture and assembling work will additionally diminish as AI mechanization will influence both agrarian and producing tasks and occupations. This implies work in administrations should widen to make up for the positions being lost in farming and assembling. Be that as it may, the administration area will likewise observe extensive realignments the same number of occupations will be disposed of and new ones will be made (Kim, Cavusgil, & Calantone, 2006). What pundits dread is the speed of occupation out of date quality through AI innovations specifically in the administration division. They state that it took over about two centuries in observing the full industrial insurgency effect and 3 or 4 decades to encounter the computerized one; it might be close to 10 years until we watch the full impacts of the AI unrest. What specialists fear is whether the social structure could withstand such a quick and gigantic decrease in occupations. They claim that even if there were tremendous retrieval programs, it might not be anything but difficult to keep away from cultural disturbances as the new openings would require abilities that may not be so effectively feasible. Notwithstanding the truck and cab drivers previously referenced that could be supplanted independent from anyone else driving vehicles, there are numerous different employments in question (Rothaermel & Deeds, 2004). Thus, according to past studies development in the system has a positive association with firm performance and this study also made the following hypothesis:

H3: There is positive nexus among the development in the system and performance of the pharmacy business in Thailand.

Work Design and Firm Performance

Work and recreation Machines, jolt, vehicles, PCs, the Internet, and cell phones between other developments influencing our life and molded not only our work but also our social condition. The AI advancements effect can be significantly more and more significant than of both the computerized and also industrial unrests set up together, as it holds the possibility to influence all undertakings right now performed by people, decreasing the measure of work left for individuals and expanding riches disparities and their extra time (Gyan-Baffour, 1999). Advocates of the AI innovations

consider this to be a constructive improvement freeing individuals from routine work, enabling them to seek after their very own advantages. There are two kinds of reactions. The first contends that monetary development in quite a while has slowed down during the most recent five decades (2016-Gordon) and that technology has had no option to bring it coming about up in decreasing genuine middle wages and in dormant middle family unit salaries. The subsequent focus to build imbalances as fewer individuals will hold the well-paying occupations and the larger part will rely upon low maintenance work or restricted business openings and in this manner, get less pay (Tregaskis, Daniels, Glover, Butler, & Meyer, 2013). Counter contentions are there to reactions with saying of Cowen-2016 that the existing log jam is transitory and such monetary and profitability development prices can't be expected as the effect of independent vehicles that could alter the car business and make solid financial development. At the start of the Industrial upset individuals used to work up to 15 hours every day, 6 or 7 days a week.

Today a standard workweek is not exactly half and there is no explanation that it can't be split later on as profitability increments. Blue-bloods didn't work at all previously, dedicating all their opportunities to relax exercises, leisure activities, occasions etc. The residents of old Athens invested the entirety of their energy philosophizing, practicing and concerned with majority rule government, while the slaves did all the work. The confident people dream is that we would all be able to turn into the "new" nobles, or the "cutting edge," with Personal Computers and robots are operating like their slaves by doing their housework's, the shopping and working at the workplace, the manufacturing land or any planet. Regardless of the factor whether this fantasy is an idealistic or tragic future is surrendered over to the peruser to choose, not disparaging in any case, that wise machines will in the long run become in any event as savvy as us and a genuine contender to

humankind whenever left it without checking and if their extraordinary capacity to enlarge our scholarly capacities isn't abused to the most extreme (Maxwell, 2008). Thus, according to past studies work design has a positive association with firm performance and this study also made the following hypothesis:

H4: There is positive nexus among the work design and performance of the pharmacy business in Thailand.

RESEARCH METHODS

The prime aim of the article is to examine the forthcoming revolution of artificial intelligence and its impact on the performance of the pharmacy business in Thailand. This aim also includes the nexus among the factors regarding the revolution of artificial intelligence such as development in system, incentive achievements, innovation and utilization and work designs on firm performance. The data for analysis were gathered from managers of pharmacy businesses who manage the machine works in Thailand. Around 650 questionnaires were circulated and after two months, only 440 valid questionnaires were received and used for analysis. The firm performance has seven items while development in system, incentive achievements, innovation and utilization and work designs have six, eight, six and eight items respectively. PLS-SEM was used to test the validity and hypotheses of the study.

FINDINGS

The findings included the validity and hypotheses testing. Convergent validity is checked by factor loadings that are higher than 0.50, Alpha that is higher than 0.70, composite reliability (CR) that is also higher than 0.70 and AVE that is also greater than 0.50. Table 1 and Figure 2 are presented the convergent validity.

Table 1: *Convergent Validity*

Constructs	Items	Loadings	Alpha	CR	AVE
Development in System	DS1	0.892	0.806	0.859	0.553
	DS2	0.812			
	DS3	0.677			
	DS4	0.648			
	DS6	0.657			
Firm Performance	FP1	0.705	0.849	0.884	0.523
	FP2	0.822			
	FP3	0.631			
	FP4	0.626			
	FP6	0.680			
	FP7	0.789			
	FP8	0.782			
Inventive Achievements	IA1	0.792	0.896	0.918	0.587
	IA2	0.843			
	IA3	0.497			
	IA4	0.812			

	IA5	0.722			
	IA6	0.776			
	IA7	0.828			
	IA8	0.800			
Innovations and Utilization	IU1	0.838	0.883	0.911	0.631
	IU2	0.834			
	IU3	0.793			
	IU4	0.666			
	IU5	0.792			
	IU6	0.828			
Work Designs	WD1	0.748	0.857	0.893	0.582
	WD2	0.742			
	WD3	0.781			
	WD4	0.804			
	WD5	0.743			
	WD8	0.758			

The discriminant validity is verified by the Fornell Larcker method and cross-loadings. The findings indicated that no issue with discriminant validity because values are less than 0.90 in both of the methods. Table 2 and Table 3 are presented the Fornell Larcker and cross-loading of the study.

Table 2: *Fornell Larcker*

	DS	FP	IA	IU	WD
DS	0.744				
FP	0.686	0.723			
IA	0.516	0.548	0.766		
IU	0.476	0.575	0.388	0.794	
WD	0.784	0.723	0.514	0.686	0.763

Table 3: *Cross Loadings*

	DS	FP	IA	IU	WD
DS1	**0.892**	0.695	0.499	0.446	0.732
DS2	**0.812**	0.639	0.521	0.364	0.589
DS3	**0.677**	0.398	0.269	0.344	0.649
DS4	**0.648**	0.289	0.200	0.252	0.408
DS6	**0.657**	0.335	0.273	0.334	0.486
FP1	0.372	**0.705**	0.303	0.426	0.392
FP2	0.430	**0.822**	0.401	0.343	0.485
FP3	0.314	**0.631**	0.325	0.349	0.341
FP4	0.323	**0.626**	0.406	0.369	0.429
FP6	0.639	**0.680**	0.443	0.480	0.613
FP7	0.730	**0.789**	0.468	0.471	0.686
FP8	0.462	**0.782**	0.373	0.426	0.559
IA1	0.298	0.351	**0.792**	0.175	0.240
IA2	0.480	0.504	**0.843**	0.411	0.484

IA3	0.262	0.246	**0.497**	0.244	0.274
IA4	0.460	0.478	**0.812**	0.358	0.478
IA5	0.396	0.437	**0.722**	0.368	0.466
IA6	0.384	0.438	**0.776**	0.300	0.464
IA7	0.429	0.424	**0.828**	0.252	0.362
IA8	0.390	0.410	**0.800**	0.217	0.306
IU1	0.326	0.438	0.288	**0.838**	0.506
IU2	0.336	0.392	0.286	**0.834**	0.496
IU3	0.444	0.511	0.292	**0.793**	0.604
IU4	0.418	0.430	0.313	**0.666**	0.512
IU5	0.252	0.336	0.224	**0.792**	0.401
IU6	0.431	0.559	0.399	**0.828**	0.664
WD1	0.441	0.496	0.354	0.665	**0.748**
WD2	0.656	0.635	0.464	0.423	**0.742**
WD3	0.413	0.508	0.397	0.639	**0.781**
WD4	0.489	0.532	0.355	0.659	**0.804**
WD5	0.738	0.518	0.376	0.362	**0.743**
WD8	0.800	0.589	0.389	0.429	**0.758**

Another method the check the discriminant validity is the HTMT ratio. The results show that no problem with discriminant validity because values are less than 0.90. Table 4 is presented with the HTMT ratio.

Table 4: *HTMT*

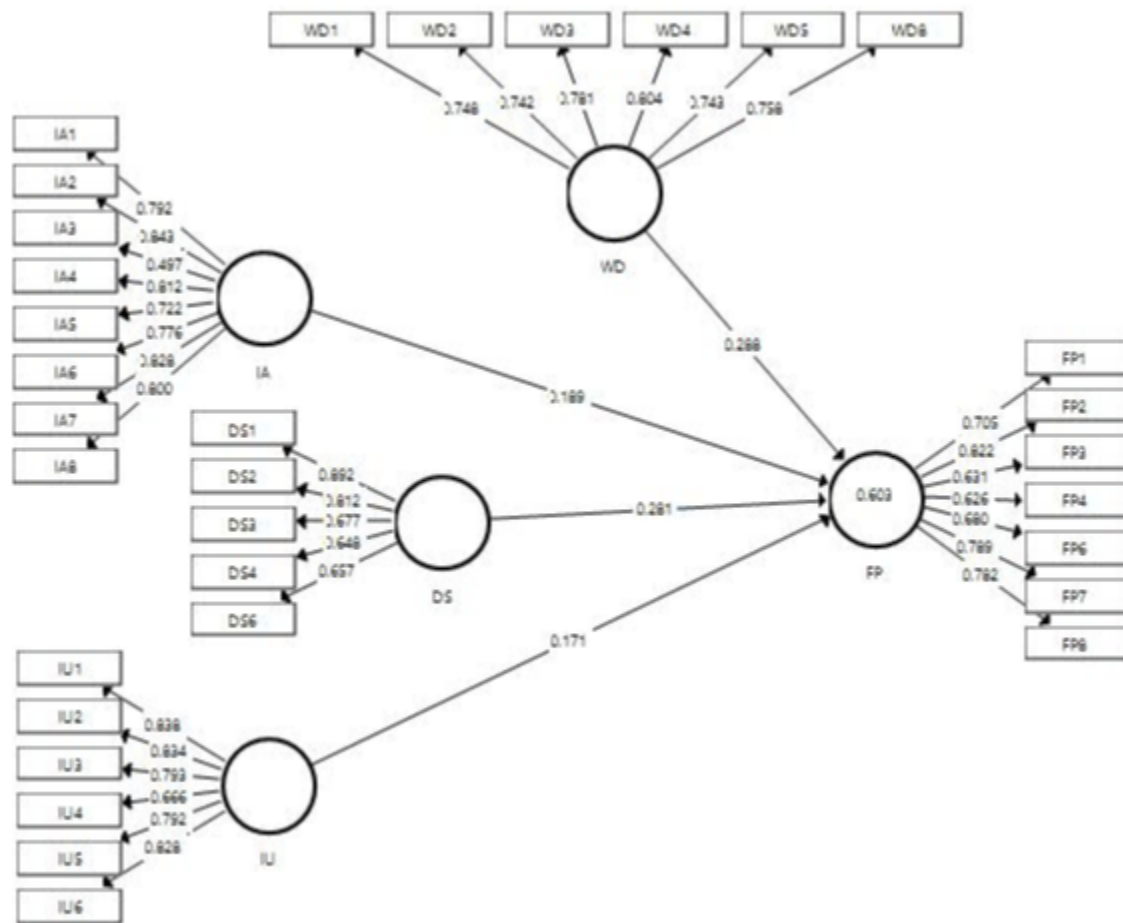|	DS	FP	IA	IU	WD
DS					
FP	0.713				
IA	0.545	0.605			
IU	0.537	0.636	0.419		
WD	0.706	0.803	0.573	0.777	

Figure 2: *Measurement Assessment Model*

The regression analysis shows the hypotheses testing. The results indicated that positive nexus among the development in system, incentive achievements, innovation and utilization and work designs with the firm performance of pharmacy companies in Thailand because beta values have a positive sign and "t" statistics are higher than 1.64 and "p" values are lower than 0.05. Table 5 and Figure 3 are presented the path analysis of the study.

Table 5: *Path Analysis*

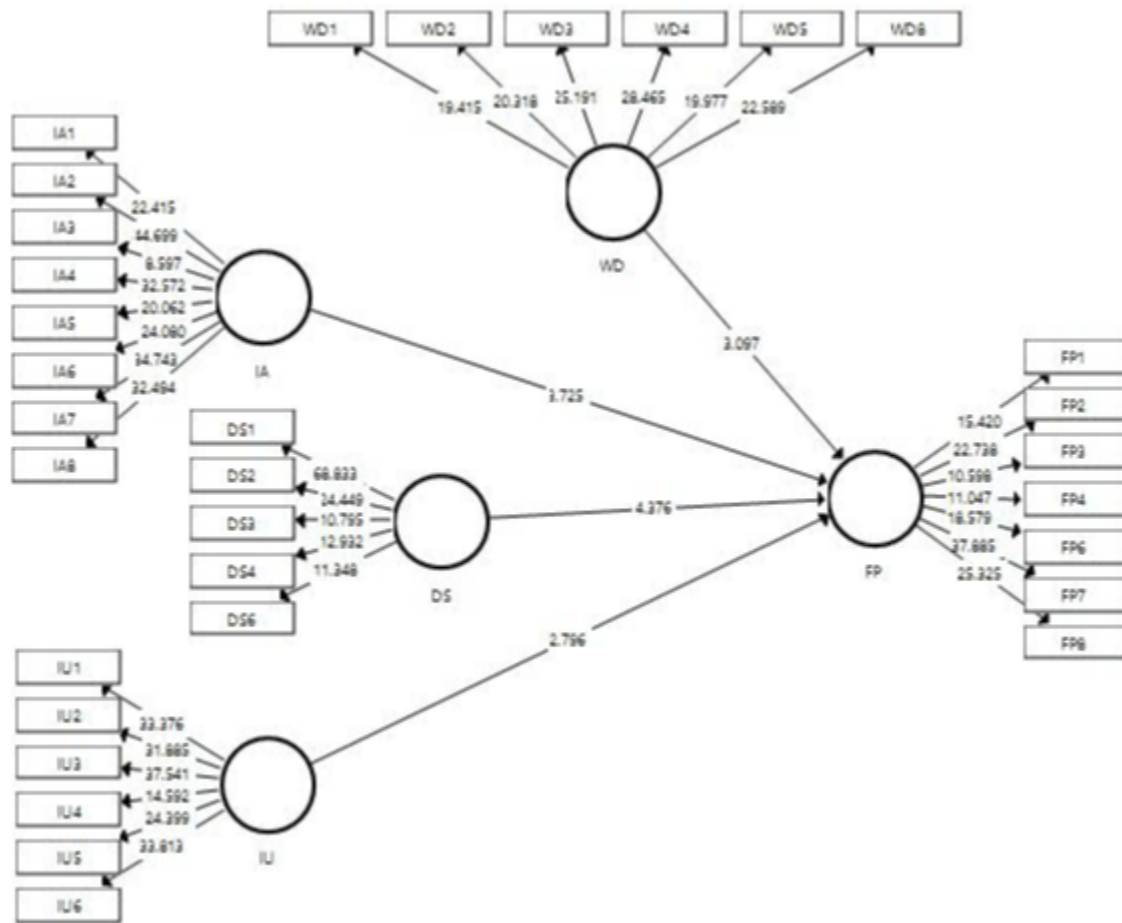|	Beta	S.D.	t-statistics	p-values	L.L.	U.L.
DS -> FP	0.281	0.064	4.376	0.000	0.169	0.382
IA -> FP	0.189	0.051	3.725	0.000	0.108	0.277
IU -> FP	0.171	0.061	2.796	0.003	0.070	0.274
WD -> FP	0.288	0.093	3.097	0.001	0.136	0.438

Figure 3: *Structural Assessment Model*

DISCUSSIONS AND CONCLUSION

The outcomes exposed that artificial intelligence developed a system that enhances firm performance. In addition, the adoption of artificial intelligence increases the motivational achievements of the organization by providing a developed system that improves the performance of the company. Moreover, the adoption of artificial intelligence brings innovation in the organization and with the utilization of this innovation the performance of the firm increases in the pharmacy companies in Thailand. Finally, the adoption of artificial intelligence improves the work design that enhances work efficiency that is the reason for high firm performance. These outcomes are similar to the findings of Mak et al. (2019) and Helbing (2019) who also fond positive relation among the outcomes of artificial intelligence and firm performance.

Finally, the present paper is reached at the conclusion that the adoption of artificial intelligence brings innovation, increase the development of the system, enhance the motivational achievements and also improve the work design of the organization. These are all the factors that enhance the performance of pharmacy companies in Thailand. Thus, the current study gives the guideline to the policymakers that they should improve their focus on the implementation of artificial intelligence in the organization that enhance the performance of the institutions.

The present study has some limitations that may be the directions for the upcoming researchers. This study takes only four factors of artificial intelligence such as development in system, incentive achievements, innovation and utilization and work designs to predict the firm performance. This study ignored the other factors that may include prospective literature in their analysis. In addition, this study only takes the Thailand market under investigation and future studies may add other countries in their examination and also can conduct cross country analysis.

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