

ARTIFICIAL INTELLIGENCE – KEY FOR RECENT BUSINESS PERFORMANCE

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Abstract : Development of recent technologies tremendously identified a tool name artificial intelligence (AI) which arises a boom across all sectors and also create widespread fear especially of job losses for all people and also further rises inequality. This research paper discusses how AI will be an effective business development tool and also highlighted driving forces, challenges in deploying, platform readiness which improvise the productivity related / unrelated to the sectors both for skilled and unskilled professionals. This paper also highlighted the above factors through by developing a research model which helps the readers to better understand the behavioural characteristics / perception towards AI. The paper focused more for technological practitioners who have blind idea / image about AI which helps them to better understand the right path to deploy a platform like this to attain maximum benefit and allow business a tremendous opportunity for longer survival especially in this technological world.

IndexTerms - Artificial Intelligence, business growth, adoption, customer experience, automation

I. INTRODUCTION

Artificial Intelligence (AI) consider to be one of the recent growing technology which disrupt every industry to rethink / reengineer about their future prospects. During the current technological scenario IT application like AI grown a spectacular path over the last few decades (Blanchet, 2016; Lee, Davari, Sing, & Pandhare, 2018; Wiljer & Hakim, 2019). AI comes under the subset of Industry 4.0 solutions which brings every business hyper automation and connectivity allows every body's working style which we want live in future. (Schwab 2017; Bloem 2014; Klosters 2016; Park 2017). Since it is still in infant stages, billions of dollars spent across sectors to undergo R & D to amplify its existing growth. We have many questions in our mind why there is sudden explosion in the growth of AI. All because of dramatic technological enhancements of machine learning.

AI made a big impact across all organizations ecosystem particularly by improving their performance especially on building relationship of organization with their key customers, partners and prospects. (Kelly, Karthikesalingam, Suleyman, Corrado, & King, 2019; Rubin Victoria et al., 2010). There are plenty of practical innovative examples of AI which we come across daily through social media like developments of Google maps, allows customers by providing recommendations to their online shopping and even for cancer detection, approximate price detection of comfortable rides by Uber etc. This motivates every business firm to actively participate in competitive race moving away from their comfort zone of business operations.

AI technologies contains plenty of industry specific applications which allows firms to plan for existing and future setups which includes healthcare, defense, financial services, tourism and entertainment and so on. AI integrates data from multiple external sources (like social media, websites etc.) where a business firm build their own data management platforms, create business models and strategies innovatively by improvising economic development (Arora, Rahman & Alon, 2017)

By the end of 2021, AI will reduce most of operational and business expenses by \$10 billion. The more benefited people are early adopters which they already attain competitive edge across the platforms. AI allows all human beings to rethink and modify the existing business process and allow robots to execute their expectations.

Most of the sectors across globally made industry-institute interaction where plenty of academicians, economists and pundits' advice more business tycoons on how artificial intelligence will allow humans to augment their existing workplace by undergoing continuous research and development on how human – machine interaction will speed up human offering insights and training data.

The reasons for the development of AI is mainly because of increase in recent economic development across nations with the intention of boosting shared prosperity and also as an end for poverty. While emerging markets are already using basic AI technologies to solve critical development challenges, much more can be done, and private sector solutions will be critical to scaling new business models, developing new ways of delivering services, and increasing local markets' competitiveness. All of these solutions require innovative approaches to expand opportunities and mitigate risks associated with this new technology.

According to the recent research which concluded recently, for every four jobs which are replaced with automation simultaneously one new automation management role is created. In the modern organizations future CXOs requires nimble, highly responsive, agile and well versed technological base knowledge is the major requirement which allow their business survival for longer duration and also to attain competitive advantage by transforming themselves from disruptive time period.

II. RESEARCH GAP

This research focused more on larger gaps between technocrats working across various segments over some segment of people who are well adopted AI and even laggards. Basically, we need to accept most of AI algorithms are not natively intelligent in nature. Most of research papers focused more on AI developments and their business impact across various segments. This

study identified several misunderstandings needed to train AI across human and their deeper appreciation which allow them to produce more AI professionals rather than laggards.

III. RESEARCH METHODOLOGY

A total of 235 participants participated for this research study through online means where the author distributed through Google Forms working across various software organizations and all the participants gave informed consent in completing the questionnaire regarding business prospects developments after introducing / adopting artificial intelligence in their respective firms. The questionnaire items were collected and recorded in systematic way and later it was analyzed through SPSS version 20.

As per demographic details shown in Table 1 40% of respondents were 2 to 5 years' experience in AI platform, 50.6% of female respondents for this study and 64% were in development and learning stage in adopting AI. This study administered using 25-item questionnaire which contains details regarding organization specific opportunities and challenges in deploying AI, possibility of integrating AI solutions along with the existing business setup and process, respondent platform readiness, expected impact on business. The researcher prepared a questionnaire based on several constructs and is represented by several variables. The number of variables changes according to the constructs. All the construct variables are measured by 5-point Likert scale where 1 considered as strongly disagree and 5 considered as strongly agree.

The study make use of five-point Likert scale to collect opinion from various business professionals who are recently / already using AI. The Likert scale indicates one being strongly disagree and five being strongly agree. Initially a pilot study conducted to check for internal consistency of survey instrument and calculated Cronbach coefficient with Cronbach's alpha = 0.85 which represents all the questionnaire items were appropriate to use.

Initially descriptive statistics of construct were calculated followed by confirmatory factory analysis. The sampling adequacy of the analysis was checked with the Kaiser-Meyer-Olkin measure and Bartlett's test of sphericity since our sample (N=235) is big enough (Field, 2013).

3.1 Research Model and Related Hypothesis

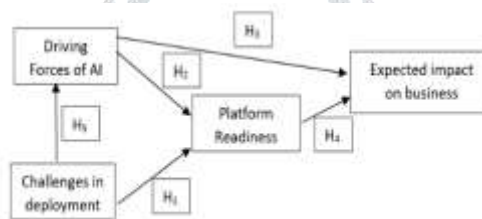


Figure 1: Research Model

Challenges in deploying AI (CD) and platform readiness (PR)

H₁ = Challenges in deployment (CD) will positively influence platform readiness (PR) in deploying AI in organizations

Driving forces of AI (DF) and platform readiness (PR)

H₂ = Driving forces of AI will positively influence platform readiness (PR) in deploying AI in organizations

Driving forces of AI (DF)

H₃ = Driving forces of AI will positively influence expected impact on business

Platform Readiness (PR)

H₄ = Platform Readiness will positively influence expected impact on business

Platform Readiness (PR) and Expected impact on business (EID)

H₅ = Platform Readiness (PR) and expected impact on business (ED) will positively influence challenges in deploying AI

4.1 Demographic profile of respondents

Table 1: Personal characteristics of respondents are presented in the table maximum respondents

Particulars	Classification	No. of Respondents	%
Years of experience in AI	Less than 6 months	76	32.3
	6 months – 2 years	56	23.9
	2 – 5 years	94	40
	Above 5 years	9	3.8
Gender	Male	116	49.4
	Female	119	50.6
AI Adoption Stage	Introductory	40	17
	Development and Learning	150	63.9
	Maturity Stage	25	10.6
	Laggard	20	8.5

The results of the first stage data analysis are presented in Table 2. The summary of the table descriptions shows that first two column shows the names of the constructs and the corresponding variables were presented. Third column represents number of respondents (N) answered all the questions within the particular construct. Fourth column represents Cronbach’s α value is shown. Fifth column shows combination of first two eigenvalues together with the percentage of explained variance (EV), sixth column represents values of KMO and Bartlett’s test, the seventh column shows factor loadings, and final last column gives average mean and average standard deviation (SD) for each construct were presented.

Table 2: First Stage Data Analysis

Factor/Construct	Questions Variables	N	Cronbach α	Eigen Values/ Explained Value (EV)	KMO, Bartlett's test	Factor Loading	Average Mean, SD
Driving forces of AI [DF]	Growth potential	235	0.72	$\lambda_1 = 2.62$ $\lambda_2 = 0.78$ EV = 63.46%	0.72 P < 0.001	0.83	Mean = 3.05 SD = 0.97
	Improve customer journey / experience					0.92	
	Experiment/fail/agile philosophy					0.83	
	Labor to capital intensive business model					0.54	
Challenges in Deploying AI [CD]	Skill Challenges	221	0.85	$\lambda_1 = 3.12$ $\lambda_2 = 0.57$ EV = 72.18%	0.87 p < 0.001	0.79	Mean = 3.72 SD = 0.85
	Knowledge / maturity challenge					0.85	
	High deployment cost / lack of ROI					0.75	
AI Platform Readiness [PR]	Cultural challenge [Trust]	220	0.79	$\lambda_1 = 3.68$ $\lambda_2 = 0.65$ EV = 68.75%	0.79 p < 0.001	0.93	Mean = 2.98 SD = 0.67
	Building scientist team					0.74	
	Collaboration with external parties					0.82	
Expected impact on business [EIB]	Self development / Community exchange	208	0.77	$\lambda_1 = 2.73$ $\lambda_2 = 0.97$ EV = 54.55%	0.72 p < 0.001	0.85	Mean = 3.94 SD = 0.66
	Ready & open to further improvement					0.65	
	Improved efficiency and productivity					0.64	
	Specific regulations required					0.76	
	Improved customer acceptance					0.72	
	Impact on job Market					0.78	

It is evident from the last column of Table 2 that the highest rated construct is expected impact on business on deploying AI with the highest average mean 3.94 and the lowest average standard deviation 0.66. This shows that every business entity respondent felt AI was not new them; respondents felt current AI and machine learning algorithms around them will be for some time. The study observed speed of development on AI platforms based on how humans take and accept and real disruptors may come from any part / anywhere.

4.2 Correlation Analysis

After conducting the Reliability Analysis, the study inspected correlation coefficients to discover the relationships between four factors and investigate the hypotheses (See table 3). The correlations between all the factors DF, CD, PR and EIB are positive and significant.

Table 3: Correlation

	Factor	DF	CD	PR	EIB
DF	Pearson Correlation	1	0.525**	0.614**	0.493**
CD	Pearson Correlation	0.526**	1	0.728**	0.754**
PR	Pearson Correlation	0.614**	0.728**	1	0.684**
EIB	Pearson Correlation	0.493**	0.754**	0.684**	1

** . Correlation is significant at the 0.01 level (2-tailed).

Taking into account that all the questions of the construct AI platform readiness were reverse phrased, it follows with average mean slightly below three (Mean = 2.98 and SD = 0.67). The reasons for lower value of this construct is that respondents felt that their organizations made specific investments in platforms to handle complex and real time data while deploying AI. Most of the respondents prefer to plan for hybrid-based cloud-in-house strategy while deploying AI in their firms.

On the other hand, the estimates of the construct challenges in deploying AI with (Mean = 3.72 and SD = 0.85) shows cultural challenge and especially trust considered to be most important aspect since much of the transactions made by external entities and the use end results through advanced analytics as a part of changing work environment.

4.3 Hypothesis testing

To enhance further in this study regression analysis was conducted to measure H₁ and H₂. Table 4 summarizes the result discussion.

Table 4: Predictors CD and DF -> Dependent PR: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.756 ^a	0.624	0.610	.721

a. Predictors: (Constant), CD, DF

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
		B	Std. Error			
1	(Constant)	.265	.185		1.514	.134
	CD	.316	.046	.343	6.654	.000
	DF	.542	.052	.536	10.232	.000

a. Dependent variable: PR

As we see from table 4, the value of R square indicated two predictors (CD, DF) with 62.4% of variation in platform readiness. The model depicts other unknown factors which may impact platform readiness to deploy AI within the form. Also the standardized coefficient (β) shows that driving forces of AI (β = 0.536) have larger impact than challenges in deployment (β = 0.343). Also Sig. value shows that the predictors had significant and positive impact on platform readiness (PR) at 0.001 level. Subsequently, regression analysis also conducted to measure H₃ and H₅ shown in table 5 discussed the impact of driving forces (DF) and platform readiness (PR) shows expected impact on business (EIB) on successful deployment on AI in organizations.

Table 5: Predictors PR and DF -> Dependent EIB: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.776 ^a	0.635	0.617	.48634

a. Predictors: (Constant), PR, DF

Coefficients^a

Model	Unstandardised Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
1 (Constant)	.321	.172		1.732	.086
PR	.614	.064	.572	8.342	.000
DF	.275	.067	.314	4.316	.000

a. Dependent Variable: EIB

As we see from table 5, the value of R square indicated two predictors (PR, DF) with 63.5% of variation in platform readiness. The model depicts other unknown factors such as platform readiness and driving forces of AI (DF) positively related to attain positive expected benefit to business. Also the standardized coefficient (β) shows that platform readiness ($\beta = 0.572$) have larger impact than driving forces ($\beta = 0.314$). Also Sig. value shows that the predictors had significant and positive impact on expected impact on business at 0.001 level.

Table 6: Summary of Hypothesis Testing

Hypothesis	Specification	Results
H ₁	Challenges in deployment (CD) will positively influence platform readiness (PR) in deploying AI in organizations	Supported ($\beta = 0.343$), $p < 0.001$
H ₂	Driving forces of AI will positively influence platform readiness (PR) in deploying AI in organizations	Supported ($\beta = 0.546$), $p < 0.001$
H ₃	Driving forces of AI will positively influence expected impact on business	Supported ($\beta = 0.314$), $p < 0.001$
H ₄	Platform Readiness will positively influence expected impact on business	Supported ($\beta = 0.572$), $p < 0.001$
H ₅	Platform Readiness (PR) and expected impact on business (ED) will positively influence challenges in deploying AI	Supported ($\beta = 0.287$), $p < 0.001$

5.0 Conclusion

From the study we conclude AI is not going to remove mass people from work many of users across the sectors are likely to be early adopters and it currently linked with different segments like partnership between human and AI and especially human need to experiment themselves by improvising to face tough times which may expect an exponential growth in future. Partnership between human and AI will be more competitive and challenging where humans not stopping their AI learning cycle which will allow them to generate more insights while dealing with powerful algorithms to sustain this new technological market

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