EFFECT OF BUSINESS STRATEGY, BUSINESS VALUE, AND BUSINESS ANALYTICS ON FINANCIAL PERFORMANCE FOR THAI TRADITIONAL PHARMACEUTICAL BUSINESS IN THAILAND

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Abstract

As the technology has been revolutionized in this era, the importance of different types of software and their incorporation in the organizations is inevitable and it is supposed to enhance the performance of any firm that is using different kind software for its various operations. This study has been conducted so that it will find out the impact of SAAS to firm capabilities on the firm performance in the mediation of three variables named as business strategy, business value and business analytics. In order to achieve the aforementioned objective, the researcher has collected data from 430 respondents that are working in the Thai Traditional pharmaceutical companies in Thailand. Software program were used in order to analyze the collected data and it was found out that the impact of software as a support SAAS to firm capabilities on the firm performance is significant. Another important results obtained is related to the mediating variables i.e. business strategy, business value and business analytics. It has been found out that the mediating impact of all these mediating variables is significant between SAAS to firm capabilities and firm performance. In light of these results, different theoretical and practical implications and benefits have been discussed by the author.

Keywords: Three layer focus, Financial Performance, Software as a Service (SAAS) Support to Firm Capabilities

1 INTRODUCTION

According to Seethamraju (2015), now a days it become trend that increasing with time to adopt the application as enterprise in the model of software-as-a-service. Worldwide, such increase in tendency is seen as growth that expectedly occurs on the market of software which considered as platform for services through the analytics of market as well as Software as a Service (SAAS) Support. Now in 2020 this figure reach at 18.6 percent as annual rate of growth in five compound years. This figure show that the growth is more than five times than the software that traditionally occur in market(Rodrigues, Ruivo, & Oliveira, 2020).similarly, several other analytics of market examine that the enterprise application for market of software show its dramatic shift that continue in thirty years this s shift as irreversible that will be continue and in this year mean in 2020 almostthirty five percent companies used

Software as a Service (SAAS) Support(Rodrigues et al., 2020). The Thai Traditional pharmaceutical industry of Thailand is one of the leading markets in whole of the world and used of software service is best to enhance its efficiency and financial performance in effective manner. Following table 1 and graph 1. Show that revenue for support service by software is increasing day by day in all over the world because it effectively controls the cost and improve financial performance.

Table 1 Cloud Computing (Software as a Service (SAAS) Support) as source revenue

Years	Infrastructure Software as a Service (SAAS) Support (in dollars)
2016	5.4
2017	7
2018	8.6
2019	10.2
2020	12
2021	13.8
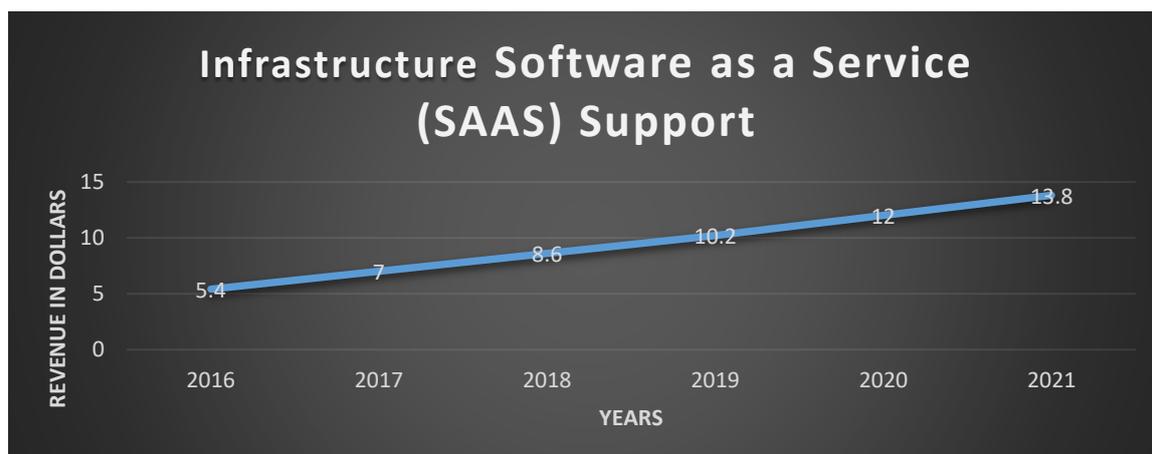
Graph 1 Cloud Computing [Software as a Service (SAAS) Support] as source revenue

The system of information as well as technology of information always have a serious impact on the strategies of business and remain a serious concern for industries and market (Schryen, 2013). Among various organizations the performance of firms is become comparable , which have indicators for comparison such as return, revenue, capital and profits or many others like share of market, such indicators are mainly associated with advantages that received after competition and represented through the sustaining and creation of performance as well as value of market (Rodrigues et al., 2020). This study will be carrying out on the basis of following objectives:

1. To analyze the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance of Thai Traditionalpharmaceutical industries of Thailand.

2. To analyze with mediating role of business strategy the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance of Thai Traditionalpharmaceutical industries of Thailand.
3. To analyze with mediating role of business value the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance of Thai Traditionalpharmaceutical industries of Thailand.
4. To analyze with mediating role of business analytics the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance ofThai Traditional pharmaceutical industries of Thailand.

The significance of the study is that strategies, values and analytics of business enhance the financial performance of firms due to use of technology such as software as a support service which driven further by market-centric point of view, also sustainable if resources are limited (Rodrigues et al., 2020). The introduction of the study discussed in first section. Second part of the paper will explained the literature of the study area. While the methodology will be included in third section. After that, in forth part of the paper results and then discussion or conclusion will be added.

2   LITERATURE REVIEW

2.1   Resource Based View Theory

The theory of resource based explained that firms always compromise on resources as bundle form, these resources are rare, highly significant, non-imitable along with it is difficult to substitute the resources, so such resources cause high level impact on the performance of firms as well as in its advantages that achieved after competition. In a number of functional base area, the capabilities of firms build through the processes of organizations which using these resources either the development in combination or single, so these resources can be technological, human or physical nature. Theory of resource based can be considered as basic theory for modelling the performance of organizations, economy at national level along with value of organizations which all occur through the informational technology in which Software as a Service (SAAS) Support used (Kerdpitak, 2022; Seddon, 2014).

2.2   Impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance

Organizations used increasingly the software of sourcing the application of business is called as Software as a Service (SaaS). In firms, the improvement of quality that already exist and reduction of cost gave innovation as low cost and rapid through the Software as a Service (SAAS) Support and ultimately enhance the financial performance of organizations. However, till at this time the, about the benefits of Software as a Service (SAAS) Support the decision makers still unclear which became a gap in literature. The study of Loukis, Janssen, and Mintchev (2019) showed that adaptation of firms for Software as a Service (SAAS) Support is positively affect the innovation along with operational benefits. Both benefits ultimately enhance the financial performance of firms. In these operational benefits have

more stronger impacts a compared to innovation benefits (Loukis et al., 2019). Following hypothesis is formulated on the basis of such discussion:

H1: Software as a Service (SAAS) Support to Firm Capabilities enhances the financial performance of organizations.

2.3 With mediating role of business value the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance

According to Hsu (2013), in application of enterprise within its specific area, business value is explained as the advantages which obtained with the help of improvements in process of whole organizations, reduction of cost, increased of productivity and efficiency in performance (Krishnamoorthi & Mathew, 2018). The value of business have a relationship with performance of the firms which basically occur in term of financial performance. Meanwhile, in the levels of organizational development theimpacts of software occur and to explain the advantages with the help of indicators which enhance the performance of organizations such as share of markets and assets of market. Similarly, value of business act as mediator between the financial performance of firms and use of advance techniques such as software as a service support (SAAS)(Ji-fan Ren, Fosso Wamba, Akter, Dubey, & Childe, 2017). Following hypothesis is formulated on the basis of such discussion:

H2: the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance with mediating role of business value

2.4 With mediating role of business strategy the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance

the strategy of competitive advantages chosen as the strategy of the business which commonly used in goals setting, then determining those actions which used in achieving the set goals, and then resources mobilizing that are limited usually to execute such goals to enhance the performance of firms (Kerdpitak et al, Linton & Kask, 2017). Similarly, in strategy of low cost, the firms continuously trying that it generate advantages with the help of cost control as well as by reduction of cost from all sources that possible present and available. Whereas, firms with a unique strategy must looking towards uniqueness or pre-proof either through the branding and imaging or from the services and products that provided to generate the higher returns. The informational technology such as software support services have positive impact on the performance of firms which reinforced through the strategy of business which choose in wise manner to increase the financial performance as well as outcomes of organizations. Resource based theory suggest that business strategy enhance the financial performance (2022; Rodrigues et al., 2020). Following hypothesis is formulated on the basis of such discussion:

H3: the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance with mediating role of business strategy

2.5   With mediating role of business analytics the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance

Jeble et al. (2018) explained that business analytics is a capability of organizations which they exploit or process to know how any firm sustain and achieve the competiveness regarding the organizational performance of the firms(M. Gupta & George, 2016). Organizations exploit their resources with advance techniques with the help of support service from software which enhance with capabilities f firm in which it established business analytics, which further can be defined as edge of firms to assemble, deploy and integrate the resources of company to improve and gain the share of market and ultimately enhance the profitability, such outcomes show the improved financial performance of firms (S. Gupta, Qian, Bhushan, & Luo, 2018). Following hypothesis is formulated on the basis of such discussion:

H4: the impacts of Software as a Service (SAAS) Support to Firm Capabilities on financial performance with mediating role of business analytics

2.6   Research Model
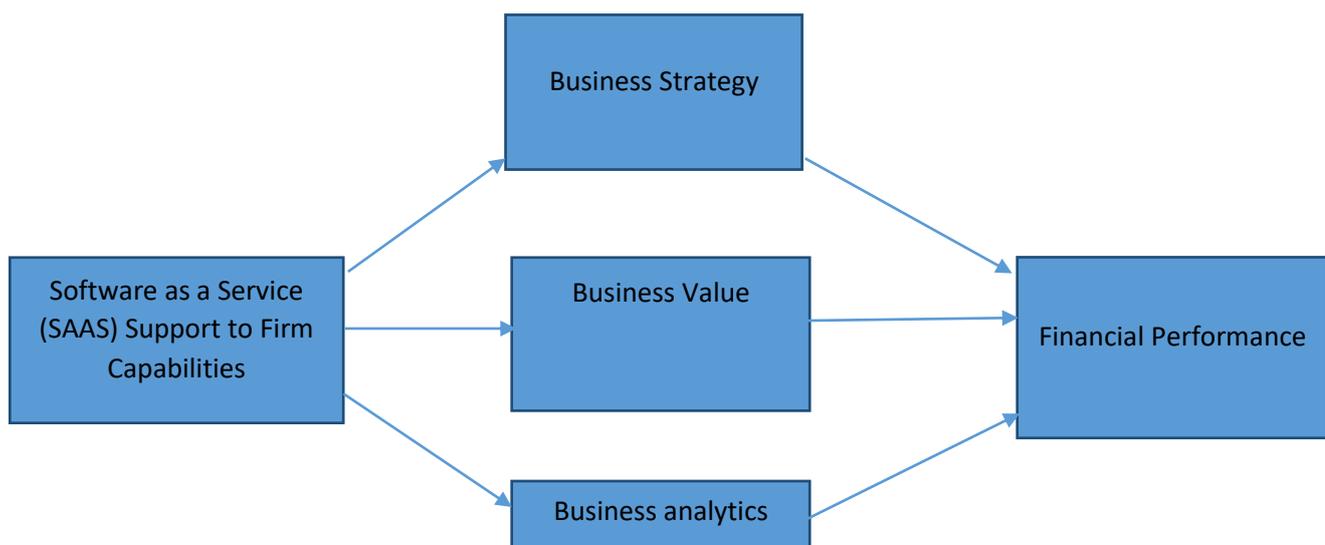
3   METHODOLOGY

3.1   Data Collection

Data for the research purpose was collected by the researcher from 430 employees working in different Thai Traditional pharmaceutical companies of Thailand. These employees have been selected as a sample by using purposive sampling technique and they are all are having enough knowledge and information about their relevant firm's usage and policies as far as software as a service SAAS is considered. This criterion has been developed by the researcher so that the content validity may be improved in context of the study. The common

method bias of the collected data was measured and explored through Harman's one factor test. The data has been collected through the self administered questionnaire prepared by the researcher in a good order and structure, containing the questions that are very simple and easy to understand by the employees. The questionnaire includes the items that have been used in the past studies for each individual variable and this step has been taken in order to enhance the construct validity of the study.

3.2 Measurement

The measurement model for the current study has been developed by the researcher on the basis of the information obtained from the review of the studies conducted in the similar context in the past. The variables of this study include software as a service SAAS support to firm capabilities, business strategies, business value, business analytics, and financial performance. All these variables along with their measurement item have been discussed here. The first one is financial performance, which is the dependent variable of the study and may be measured by using two sub-constructs names as market performance and profitability. These are measured by using total of 7 items and one of the items for each sub-construct is "sales volume" and "profit margin" respectively. These items are developed based on the past study (Hsu, 2013; Porter, 1981). Software as a service SAAS support to firm capabilities is the independent variable of the study and contains three sub-constructs i.e. organizational/managerial, marketing and technical. All these constructs have been measured by 14 items in total. One of the items from each sub-construct is "Knowledge and skills of employees", "Control and access to distribution channels" and "Efficient and effective production department" respectively. All the 14 items have been taken from the past study by a researcher (Dess & Davis, 1984). Business strategy is the mediating variable and has been measured by 11 items, developed by a researcher (Rivard, Raymond, & Verreault, 2006). One of these items is "Research and Development expenditure for product development". Another mediating variable is business value and it has been measured by 8 items, developed by a researcher (Miller, 1988). One of these items is "Quality of Customer Service and Support". In the last, there is another mediating variable, business analytics. It has been measured by 7 measurement items (Kohavi, Rothleder, & Simoudis, 2002).

3.3 Statistical Analysis

In order to analyze the collected data, Software programs have been used by the researcher. Demographic analysis, descriptive analysis and factor analysis have been obtained from SPSS. On the other hand, confirmatory factor analysis and structure equation modeling have been obtained by using software.

4 DATA ANALYSIS

4.1 Demographics

As per the demographics of the data collected is concerned, it has been found out by the researcher that the total number of respondents is 430 and it includes both males and females by 56% and 44% respectively. In addition to this, the percentage of these respondents having

graduation is 13.5%, post graduation is 48.8%, those having Masters is 28.8% and those having other educational qualifications are 8.8% respectively. In regard of age of the respondents, 23.7% of them were having the age from 18 to 25 years, 31.2% of the respondents were of the age ranging from 26 to 30 years, 30.7% of them were of the age from 31 to 35 years and remaining 14.4% of the respondents were having the age above 36 years.

4.2 Descriptive Statistics

It can be evidently seen in the table 2 showing descriptive statistics that the data is skewed within the appropriate range, that is, between -1 and +1. This suggests that the data is normal and valid to be used in the study. In addition, as the maximum and minimum statistic values are lying in the range of five point Likert scale, 1 to 5, the absence of out liar in the collected data has been confirmed. Thus the data is valid to be applied other tests for research purpose.

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
SAASFiCap	430	1.00	5.00	3.4019	1.13435	-.578	.118
BusiStr	430	1.00	5.00	3.5081	1.14554	-.671	.118
BusiValu	430	1.00	5.00	3.4149	1.15428	-.706	.118
BusiAnal	430	1.00	5.00	3.6462	1.14745	-.595	.118
FirmPerf	430	1.00	5.00	3.5221	1.12224	-.613	.118
Valid N (listwise)	430						

4.3 KMO and Bartlett's Test

KMO and Bartlett's are important tests that indicate whether the factor analysis of the variables in useful for the study or not. If the value of KMO test is close to 1.00, this suggests that the factor analysis will be useful for the collected data. On the other hand, if the value of Bartlett's test is very small i.e. less than 0.05, which means that the factor analysis will be useful for the study. Both conditions have been met as per the table 3.

4.4

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.977
Bartlett's Test of Sphericity	Approx. Chi-Square	38204.313
	df	1081
	Sig.	.000

4.5   Rotated Component Matrix

It can be evidently observed in table 4, that the factor loading of almost all the indicators used in the study are greater than 0.7(Hassan, Hameed, Basheer, & Ali, 2020; Iqbal & Hameed, 2020). These values suggest that the collected data is totally eligible for research and applying various tests and techniques. In addition to this, no cross loading issue has been observed in the collected data.

Table 4: Rotated Component Matrix[a]

	Component				
	1	**2**	**3**	**4**	**5**
SC1	.748				
SC2	.738				
SC3	.768				
SC4	.750				
SC5	.744				
SC6	.885				
SC7	.867				
SC8	.879				
SC9	.881				
SC10	.901				
SC11	.897				
SC12	.903				
SC13	.901				
SC14	.894				
BS1		.737			
BS2		.769			
BS3		.775			
BS4		.804			
BS5		.788			
BS6		.768			
BS7		.756			
BS8		.797			
BS9		.804			
BS10		.803			
BS11		.809			
BV1			.708		
BV2			.732		
BV3			.733		
BV4			.735		
BV5			.788		
BV6			.787		

BV7			.785		
BV8			.787		
BA1					.724
BA2					.740
BA3					.721
BA4					.694
BA5					.775
BA6					.783
BA7					.773
FP1				.763	
FP2				.726	
FP3				.747	
FP4				.728	
FP5				.760	
FP6				.762	
FP7				.767	

4.6 Convergent and Discriminant Validity

The researcher has presented the results of convergent and discriminant validity in table 5. As per these results, it is crystal clear that the CR for all variables is more than 0.7 while AVE values are more than 0.5. In the similar way, it can also be observed that the variables are having loading values unrelated with the others thus the validity and reliability of the collected data has been confirmed.

Table 5: Convergent and Discriminant Validity

|	CR	AVE	MSV	BA	SC	BS	BV	FP
BA	0.912	0.885	0.552	**0.941**				
SC	0.915	0.829	0.378	0.615	**0.911**			
BS	0.906	0.865	0.582	0.739	0.609	**0.930**		
BV	0.962	0.871	0.582	0.729	0.548	0.763	**0.933**	
FP	0.926	0.802	0.552	0.743	0.572	0.693	0.730	**0.895**

4.7 Confirmatory Factors Analysis

According to the results of confirmatory factor analysis CFA given in table 6, the researcher has made it clear that the values for all the indicators of CFA present within the given threshold range by the researcher. This makes it very clear that the hypothetical model is completely fit to be used in the study.

Table 6: Confirmatory Factors Analysis

Indicators	Threshold range	Current values
CMIN/DF	Less or equal 3	2.046
GFI	Equal or greater .80	.804
CFI	Equal or greater .90	.947
IFI	Equal or greater .90	.947
RMSEA	Less or equal .08	.069

Figure 2: CFA
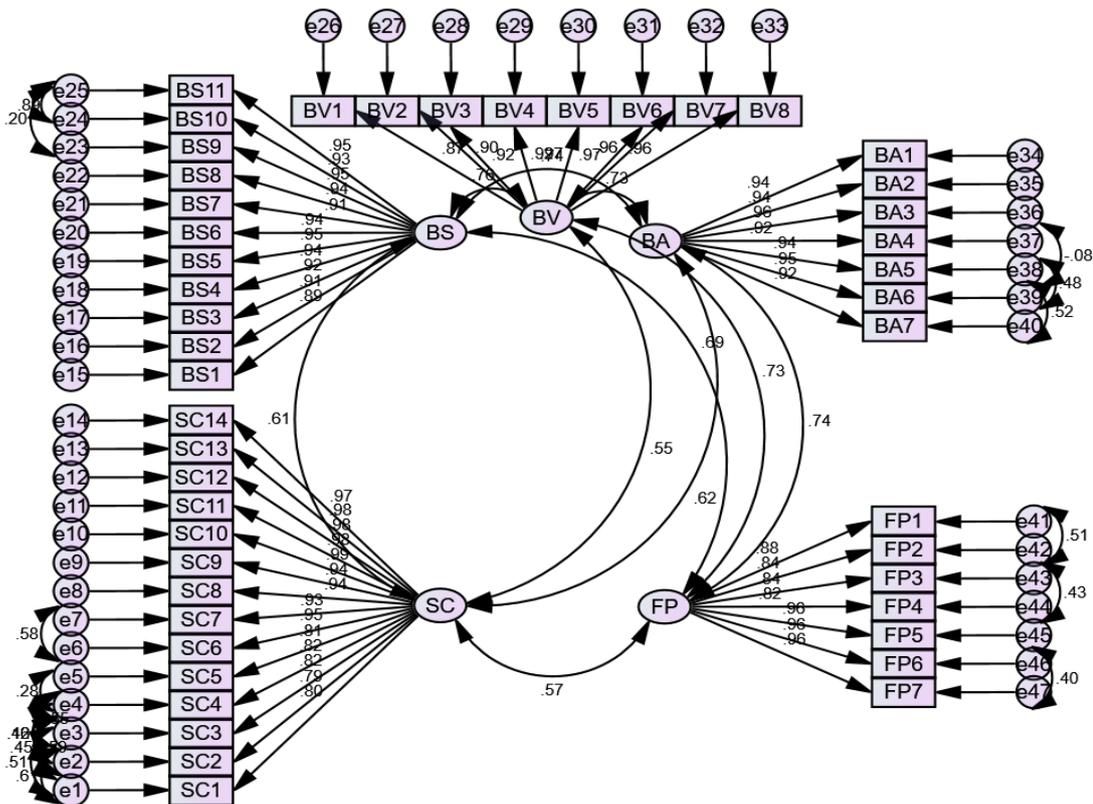
4.8   Structural Equation Modeling

According to the results of structural equation modeling SEM presented in table 7, it has been clearly evident that the impact of software as a support SAAS to firm capabilities on the firm performance is significant. With one percent increase in SAAS to firm capabilities, the firm performance is supposed to increase by 14% according to the results. Another important results obtained is related to the mediating variables i.e. business strategy, business value and

business analytics. It has been found out that the mediating impact of all these mediating variables is significant between SAAS to firm capabilities and firm performance.

Table 7: Structural Equation Modeling

Total Effect	SAASFiCap	BusiAnal	BusiValu	BusiStr
BusiAnal	.650***	.000	.000	.000
BusiValu	.608***	.000	.000	.000
BusiStr	.662***	.000	.000	.000
FirmPerf	.662***	.365***	.336***	.125*
Direct Effect	SAASFiCap	BusiAnal	BusiValu	BusiStr
BusiAnal	.650***	.000	.000	.000
BusiValu	.608***	.000	.000	.000
BusiStr	.662***	.000	.000	.000
FirmPerf	.137*	.365***	.336***	.125*
Indirect Effect	SAASFiCap	BusiAnal	BusiValu	BusiStr
BusiAnal	.000	.000	.000	.000
BusiValu	.000	.000	.000	.000
BusiStr	.000	.000	.000	.000
FirmPerf	.524***	.000	.000	.000

Figure 3: SEM
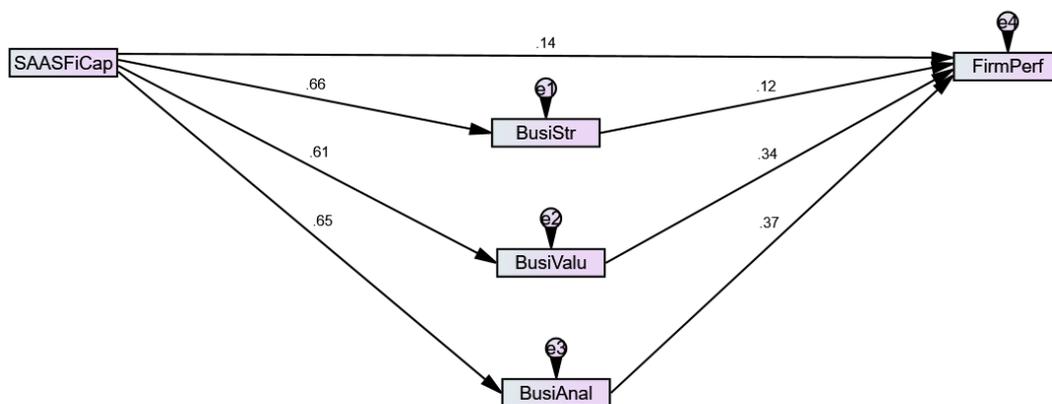
5   DISCUSSION AND CONCLUSION

5.1   Discussion

As also discussed in the earlier sections of the study, the basic aim behind this study was to find out the impact of SAAS to firm capabilities on the firm performance in the mediation of three variables named as business strategy, business value and business analytics. As far as the first hypothesis is concerned, this hypothesis has been accepted as the impact of SAAS to firm capabilities has been found as significant on the firm performance. The studies that have

considered similar topics in the past have also came up with the similar results (Appelbaum, Kogan, Vasarhelyi, & Yan, 2017; Bernard, Moxnes, & Saito, 2019; Leonidou, Christodoulides, Kyrgidou, & Palihawadana, 2017). The next three hypotheses were regarding the mediating role of three variables i.e. business strategy, business value and business analytics. All these hypotheses have been accepted in the current study as the mediating impact of all of them has been found as significant by the researcher. These results are in accordance with the studies that have been conducted in the past on common aspects (Bennett, Bettis, Gopalan, & Milbourn, 2017; Kim, Jang, & Yang, 2017; Seddon, Constantinidis, Tamm, & Dod, 2017).

5.2 Conclusion

In this age of technology, the importance of different types of software and their usage in the organizations cannot be denied and it is supposed to boost up the performance of any firm that is relying on different software for its various operations. This study has been designed in such a way that it will find out the impact of SAAS to firm capabilities on the firm performance in the mediation of three variables named as business strategy, business value and business analytics. The results obtained indicate that the impact of SAAS to firm capabilities on firm performance has been found as significant. In the similar way, the mediating impact of business strategy, business value and business analytics in the aforementioned relationship, has also been found as significant.

5.3 Implications

As this study is conducted find out the impact of SAAS to firm capabilities on the firm performance in the mediation of three variables named as business strategy, business value and business analytics, it contains a wide range of information about these aspects and the other researchers and organizations may get benefit from this study in different ways and to increase the performance of the firm.

5.4 Limitations and Future Research Indications

The most important limitation is that the sample size is not large enough to provide as generalized results as required, therefore its size is supposed to be increased in the future studies. In addition, the variables other than those used in this study may be incorporated to provide more information. The other researchers may also use other tests and techniques to analyze the collected data.

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