Examining The Influence Of Support Factors On The Performance Of Sustainable Agriculture Practices

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ABSTRACT

Farmers attitude towards the agricultural practices have been changing towards the organic farming or sustainable agriculture in India for the past one decade. The agricultural sector needs innovative technologies to make shift from production oriented farming to profit oriented sustainable farming. Farmers are also now realizing the significance of the sustainable agriculture practices both from the economic and ecological point of view. But they need various aspects of supports for the effective and efficient performance. Though, many farmers started practising sustainable agriculture practices for more than a decade, but still the exact performance of the sustainable practices over the years has not yet been studies extensively. The performance of the farmers in sustainable agricultural practise to be studied in order to evaluate the further improvements and future scope of sustainable agriculture practices. The purpose of this study was to examine the influence of various aspects of support like subjective norms, government support, supply chain support, society support etc., on the performance of sustainable agriculture practices of farmers. The respondents of this study consisted of 293 farmers of Coimbatore district in Tamil Nadu, India. A structured questionnaire was used to collect the data. Regression analysis was carried out to study influence of support factors on performance. The findings of this study showed that there is a significant positive influence of various aspects of attitude of the support on the performance of the farmers in sustainable agricultural practise. Based on the findings, managerial implications and future scope for the study have been suggested to the concerned stake holders.

Keywords: *sustainable agricultural practices, performance, support, subjective norms, government, supply chain, society,*

INTRODUCTION

In agriculture sector in India and all over the word, the concept of sustainability agriculture practices has been gaining much importance and consideration. (Lacy et al., 2009). In India already out of 55 million hectares of irrigated land, almost one-third of a land got degraded and about 7 million hectares of land got abandoned. To overcome this situation, sustainable agriculture practices should be followed by the farmers in India. Generally, a lot of efforts to be exerted to uplift the agriculture to a state where effective production can be reaped with minimum losses or damages. Sustainable agriculture practices and methods use higher degree of natural resources, decrease or minimal usage of external inputs that are dangerous to the environment and the stakeholders, giving importance for the preservation of soil, energy, water and other natural resources (Rasul & Thapa, 2003). Farmers attitude towards the agricultural practices have been changing towards the organic farming or sustainable agriculture in India for the past one decade (Rigby & Caceres, 2001). This changing agriculture situation towards the

sustainable agricultural practices requires various technologies, methods and techniques, for further development and improvement. The agricultural sector needs innovative technologies to make shift from production oriented farming to profit oriented sustainable farming. The situations for the practising and improvement of sustainable agriculture look more promising and favourable and many new opportunities are arising to uplift the lives of the farmers (Dhawan, 2008). Farmers also now realising the significance of the sustainable agriculture practices both from the economic and ecological point of view. But farmers who are adopting sustainable agricultural practices need various supports from government, people, industry etc., for the effective and efficient performance in their farming business (Zhen & Zoebisch, 2006). Though, many farmers started practising sustainable agriculture practices for more than a decade, but still the exact performance of the sustainable practices over the years has not yet been studies extensively. So it is very much importance to study the performance of the sustainable agriculture practices, of the farmers. More than a past one decade, many farmers are interested and started adopting the sustainable agricultural practices. But the performance of the farmers towards the sustainable agricultural practices is to be studied for the further development. Based on the above, this study intended to study the preference and performance of sustainable agricultural practices by the farmers in Tamil Nadu.

LITERATURE REVIEW

Sustainability

The paradigm of Sustainability concern in all the industries is getting spread all over the world, including agriculture industry also. Many farmers showing very much interest in adopting the sustainable agriculture and they have started practising the sustainable agriculture. Many studies have been carried out in the field of sustainable agriculture or organic farming all around the world. UNEP (2011) define sustainability as the enhancing the quality of the human standard of living inside the holding ability of the supporting ecological system which is influenced by the social and environmental dimensions. Some scholars define sustainability which is generally termed as 3P's that includes 'Planet, people and Profit' which is influenced by the economic and fiscal dimensions (Sheth et al., 2011). Sheth et al., (2011) describe that there is a linkage between the attitude towards behaviour and the concept of sustainability with regard to the effect of behavioural choices towards economic welfare, social welfare and environmental welfare. Seyfang (2007) advises that there should be a significant change in attitude related to values, goals, encouragement and description of wealth.

Sustainable Agriculture Practices (SAP)

Ikerd (1993) describe sustainable agriculture as the ability of the farm practices i) to maintain its yield or output and usefulness to the people or society for the longer period of time; ii) to be environmental frienldy iii) provide support to the society and iv) provide ecnomic benefits to the farmers. Sustainable agriculture can be described as the practice of agriculture systems that enables economic feasibility, environmental safety & security, and social acceptability (Tatlidil et al., 2008; Lee, 2005; Rasul & Thapa, 2003; Horrigan et al., 2002). The focal point of the concept of organic farming is making the soil livelier by practicing the optimal use of eco-friendly materials and processes and eliminating the application of inorganic chemicals and fertilizers (Dhawan, 2008). Sustainable agriculture practices has the ability to benefit the farmers to expand the sources of crops and increase their income, enabling the agriculture resilience to the climate conditions, facilitate the optimal use of the natural resources and revive

the ecosystems (Rao & Rogers, 2006). Sustainable agricultural practices will differ in various ways by from the method of cropping system, nature of the local climate and social & economic structure. From the sustainable point of view, there is another name which is used for the agriculture practices and methods which use higher degree of natural resources, decrease or minimal usage of external inputs that are dangerous to the environment and the stakeholders, giving importance for the preservation of soil, energy, water and other natural resources is 'alternative agriculture' (Rigby and Caceres, 2001; Leeuwis, 2000; Veisi et al., 2008). The scope of sustainable agriculture spans from the individual farm level to the local ecosystem level to the society level which is impacted by the agriculture practices. Sustainable agriculture required a system approach to understand the network between the agriculture and other dimensions of the ecosystem (D'Silva et al., 2008). Sustainable agriculture has become the main program of the various agricultural organizations and institutions all over the world (Prasad & Power, 1997). Feher & Beke (2013) propose that sustainable agriculture practices will give solutions to the various problems and issues brought by the conventional agricultural practices and it can promise quality, profit and safety.

Support towards SAP

Sustainable Agriculture Practices Support refers to the various types of supports available and provided to the farmers to adopt sustainable agriculture. In addition to farmers' attitudes and knowledge, support in terms of financial, social and educational aspects are important. Consistent supports for sustainable agriculture practices in contract farming are crucial, as this will ensure its continuing viability. Not all farmers are exposed to the concept of sustainable agriculture; thus, adequate support from pertinent agencies is needed (D'Silva et al., 2010). Azman et al., (2003) comment that farmers who are following sustainable farming need encouragement and various supports from the stakeholders such as government, family members, financial organisations, society etc. Moreover there should be enough support from the society both in terms of support for the production of sustainable agriculture products and also the consumption of the sustainable agriculture products (D'Silva et al., 2010).

In addition to farmers' attitudes and knowledge, support in terms of financial, social and educational aspects are important. Consistent support for sustainable agriculture practices in contract farming are crucial, as this will ensure its continuing viability. Not all farmers areexposed to the concept of sustainable agriculture; thus, adequate support from pertinent agencies is needed (D'Silva et al., 2010). Guo et al. (2005) and Wheeler (2008) accentuate the role of government in emboldening farmers to accept sustainable farming practices. One of the roles of government is to provide adequate financial support for sustainable farming practices. This is essential, as prior findings have revealed the importance of financial support for agriculture in terms of maximizing the socio-economic effects on rural GDP (Xiaoping and Xing, 2011). In addition to farmers' attitudes and knowledge, support in terms of financial, social and educational aspects are important. Consistent support for sustainable agriculture practices in contract farming are crucial, as this will ensure its continuing viability. Not all farmers are exposed to the concept of sustainable agriculture; thus, adequate support from pertinent agencies is needed (D'Silva et al., 2010). Guo et al. (2005) and Wheeler (2008) accentuate the role of government in emboldening farmers to accept sustainable farming practices. One of the roles of government is to provide adequate financial support for sustainable farming practices. This is

essential, as prior findings have revealed the importance of financial support for agriculture in terms of maximizing the socio-economic effects on rural GDP (Xiaoping and Xing, 2011).

Subjective Norms

The support for the sustainable agriculture practices may be provided by the family members, friends, relatives, important people in one's life etc. These supports are like the opinion of these people is generally terms as Subjective norms (Heong & Escalada, 1999). Subjective norms and social norms has the effect of influencing the people to alter their beahviour and intention towards a particualr activity like adoption of technology etc. (Venkatesh et al., 2012). A person's personal decision making is largely influenced by the improtant people like family members, friends, relatives etc. Some authors conceptualise the concept of social influence which is the consequence of the eariler concept of subjective norms that is mentioned in the Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM) (Venkatesh et al., 2003). Naeem et al., (2020) describe social influence as the extent to which a person perceive that the important people around them wanted them to use SAPs. Small et al., (2016) mention that the farmers may be influenced to follow sustainbale farming practices by their family people, friends, co-farmers, relatives etc., but the degree of perception may differ between the farmers based on their attributes. A farmer is also inclined to a variety of social pressures. Expression of higher subjective norms means conformance to social standards or expectations (Yeong et al., 2012). Normative beliefs shows the perceptions of famers towards what other people think about them and what other people want farmers should do. When subjective norms feel that sustainable agricutlure is the norm then there would be a good intention among the farmers to perform the same (Wauters et al., 2010; Yeo & Hirst, 2010). Insitutional supports like famers asssociation support also plays essential role in the performance of the sustaianable agriculture. The farmers' association and cooperatives fulfill the expectation of the farmers by helping them in the prodcution, procurement, marketing, information dissemiantion etc., realted activities (Lee, 2005). Azman et al., (2013) express that family, relatives and friends can also encourage and motivate farmers to follow sustainable farming methods.

Government Support

Likewise one of the main supports for the sustainable agriculture practices should be provided by the government. Several scholars stress that government should play a very active role in providing support and the empowerment of farmers who are following sustainable farming methods (Guo et al. 2005; Wheeler 2008). One of the main functions of government is to grant enough financial aid for the sustainable agricultural practices because this would maximise the socio-economic effect on the rural GDP (Xiaoping and Xing, 2011). Azman et al., (2013) comment that the government can endorse the uses of sustainable farm products to society in order to motivate farmers to grow more sustainable products. Both the central and state governments provide several supports to the farmers who are adopting the sustainable agriculture practices. State governments contribute the support in establishment of organic farm models where the required training, consultancy are provided related to the activities like certification, conferences, subsidies etc. Financial support schemes are also provided to the farmers for example about Rs. 10000 per hectare as an incentive during the initial stage of adopting the sustainable agriculture practices (DAC&FW, 2018).

Supply Chain Support

Similarly there should be enough support related to availability of the resources and infrastructure facilities in the supply chain network available in the region where the sustainable agriculture practices are followed. Supply chain supports like timely arrangements or availability of supply of rawmaterials and other services with required quality helps the farmers in their effective and efficient performace. Even provision of timely service inputs like provision of finanacial support, offering farm supplies in credit also an essential part of the supply chain support. All these supply chain support have significant impact on the operations of the sustainable farming and the profits. Achieving the sustainable agriculture goals is a combined effort of the entire stakeholder in the supply chain of sustainable agriculture viz. farmers, workers, marketers, policy makers and consumers. Each of these stakeholders has a unique and significant role to play contributing the success of the sustainable agriculture (Prokopy et al., 2008).

Society Support

Society is the basis for any activities or business. For any products manufactures or service rendered, it is for the consumption of people or consumers. Society should provide enough support to the eco-friendly farm products. Society support indicates the various supports extended by the society or people especially in buying and consuming the sustainable farm products. For the past several years, the concept of sustainability has got prominence among the people and many people or consumers started increasingly buying eco-friendly products (Kata & Kusz, 2015).

Performance of SAP

Performance is generally considered as achieving a specific goal or objective or target so that it would provide several benefits to the performers either physically or psychologically. The main reason behind existence of any business is making significant revenues and profit (Lapple, 2013). It is applicable for agricultural industry also. In case of sustainable agriculture practices, the main performance measures are productivity, sales and profit targets (Ma & Abdulai, 2018). The economics of family, personal motivation of achievement also influence this process of transformation in to sustainable agriculture which further speeds up the 'sustainable agriculture continuum' (Reimer et al., 2012). The productivity of the sustainable agriculture practices mainly rely on the quality and quantity of natural resources that are available for the farming process. By adopting sustainable agriculture practices are farmers are expecting considerable sales and profit (Small et al., 2016). Pannell et al., (2006) point out that profitability is the major concern to the most of the farmers. Generally among the most of the traditional farmers, there is a feeling that sustainable agricultural practices provide less economic benefits and this is mainly because of the poor understanding or knowledge on the minimising costs and maximising the outputs (Tilman, 202). A positive approach should be taken to view sustainable agricultural practices as economically beneficial practices and enough initiatives should be taken to connect farmers to the upcoming markets so that they could market their products to the consumers who are ready to pay higher prices to buy sustainable agricultural products (Jean et al., 2017). Moreover the performance of the sustainable agriculture practices is also depends on the performance of the sustainable practices adopted and also the performance of the sustainable system adopted by the farmers (Tosakana et al., 2010). SAP performance is the combined expected performance of SAPs for the environment, yield, and financial aspect of farming who are adopting SAP(Yina et al., 2014)]. Moreover, SAP improves farm efficiencyand improves the

financial outcome of the farm, reduces the cost, and improves farm productivity. The farm's fianancial performance is professed decrease in cost of farm resources and the enhancement in the farm's monetary performance as expected by the farmers (Ali et al., 2018). Altogether the performance of the sustainable agriculture should result in the establishments of farming framework which yield higher production and improved profit along with the conservation of natural resources, environmental safety and security in the long term (Roling and Wagemakers, 2002).

OBJECTIVES

The main objective of the study is to examine the impact of support factors on the performance of sustainable agricultural practices by the farmers. Based on the review of various literatures and previous studies related to sustainability, sustainable agriculture practices and their performance, it was identified that the support factors that would influence the performance of the sustainable agriculture practices may be related to subjective norms, government support, supply chain support, society support etc., Based on the above, the first objective of this study is to study the influence of subjective norms on the sustainable agriculture performance by the farmers. The second objective is to study the influence of government support on the sustainable agriculture performance by the farmers. The third objective is to study the influence of supply chain support on the sustainable agriculture performance by the farmers. The fourth objective is to study the influence of society support on the sustainable agriculture performance by the farmers.

METHOD

Research Model

The research model is depicted in Figure 1. The present investigation is an exploratory study undertaken to study the performance of the sustainable agriculture practices which is the dependent variable of this study is influenced by various attitudes like Subjective Norms, Government Support, Supply chain support, and Society support. So the independent variables of this study are Subjective Norms, Government Support, Supply chain support, and Society support.

Subjective norms indicate the normative believe of the farmers that what other people think about them and what others expect the farmers should do. Government supports indicates the various supports provided by the government for the successful performance of the sustainable agriculture practices of the farmers. Supply chain support indicates the various supports available in the supply chain network of the sustainable farming which would optimise the performance of the sustainable farming. Society support indicates the various supports extended by the society or people especially in buying and consuming the sustainable farm products. The dependent variable SAP Performance indicates the performance of sustainable farming in terms of production, sales and profit earned.
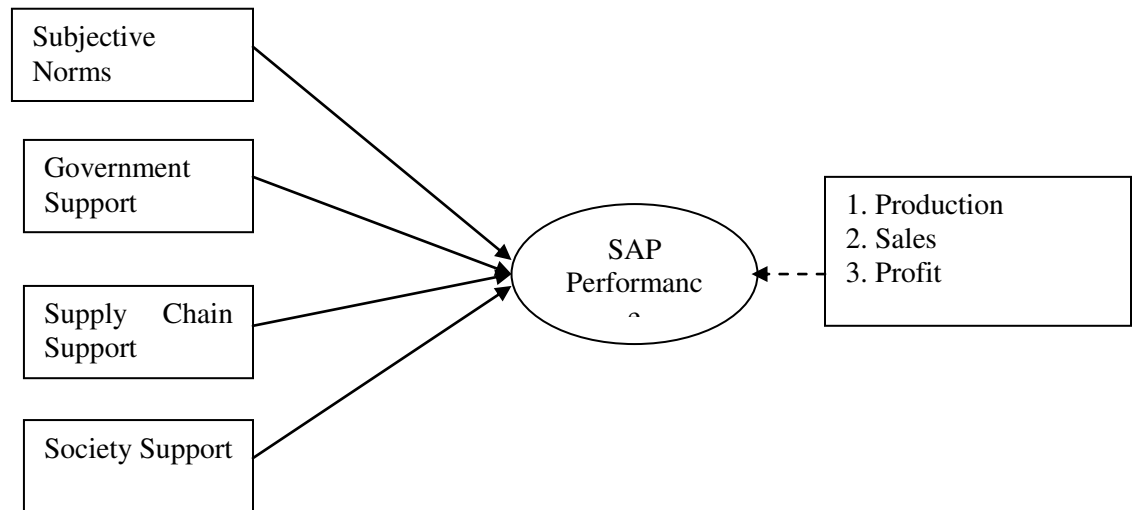
Figure 1. Research Model

Research Question

Based on the above discussion, the main research questions of this study is to know the level of various supports influence the performance of sustainable agriculture practices of the farmers. So the research questions of this study are:

i) How the subjective norms influence the performance of Sustainable Agriculture Practices of famers?

ii) How government support influences the performance of Sustainable Agriculture Practices of famers?

iii) What is the effect of supply chain support on the performance of Sustainable Agriculture Practices of famers?

iv) How society support influences the performance of Sustainable Agriculture Practices of famers?

Research Hypotheses

Based on the research models, several hypotheses are proposed. The main hypotheses of this study are as follows:

Hypothesis 1

Subjective norms and social norms has the effect of influencing the people to alter their beahviour and intention towards a particualr activity like adoption of technology etc. (Venkatesh et al., 2012). A person's personal decision making is largely influenced by the improtant people like family members, friends, relatives etc. A farmer is also inclined to a variety of social pressures. Expression of higher subjective norms means conformance to social standards or expectations (Yeong et al., 2012). Normative beliefs shows the perceptions of famers towards what other people think about them and what other people want farmers should do. Based on the above, the hypothesis 1 of this research is proposed as follows:

H1: Subjective Norms has positive influence on SAP Performance

Hypothesis 2

One of the major supports that is required for the successful performance of sustainable agricultural practices is the support from the government. Generally, government play a very active role in providing support and the empowerment of farmers who are following sustainable farming methods (Guo et al. 2005; Wheeler, 2008). One of the main functions of government is to grant enough financial aid for the sustainable agricultural practices because this would maximise the socio-economic effect on the rural GDP (Xiaoping and Xing, 2011). Based on the above, the hypothesis 2 of this research is proposed as follows:

H2: Government support has positive influence on SAP Performance

Hypothesis 3

Supply chain supports like timely arrangements or availability of supply of rawmaterials and other services with required quality helps the farmers in their effective and efficient performace. Even provision of timely service inputs like provision of finanacial support, offering farm supplies in credit also an essential part of the supply chain support. All these supply chain support have significant impact on the operations of the sustainable farming and the profits (Prokopy et al., 2008). Based on the above, the hypothesis 3 of this study is proposed as follows:

H3: Supply chain support has positive influence on SAP Performance

Hypothesis 4

Society is the basis for any activities or business. For any products manufactures or service rendered, it is for the consumption of people or consumers. Society should provide enough support to the eco-friendly farm products. For the past several years, the concept of sustainability has got prominence among the people and many people or consumers started increasingly buying eco-friendly products (Kata & Kusz, 2015). Based on the above, the hypothesis 4 of this study is proposed as follows:

H4: Society support has positive influence on SAP Performance

Sampling Techniques

The research design adopted for this study will be both descriptive and exploratory in nature. The sample population for this study was farmers who were following Sustainable Agriculture Practices (SAP) in the Coimbatore district of Tamil Nadu state, India**.** The sampling technique used in this research study was non- random sampling and convenience sampling method. That means, the farmers those who were from Coimbatore district and who were willing to participate in this research survey were selected as sampling respondents. Sampling frame work depicts about the geographical distribution of the sample population. Universe of the study is selected as the entire district of Coimbatore. After the questionnaire was distributed to the various respondents, the total number of responses received was 300. After proper scrutiny of the questionnaire for its validity the number of questionnaire found to be fit for the data analysis was 293. So the sample of this study was 293.

Measures

A structured questionnaire was designed to collect the data for this study. There were two parts of the questionnaire in this study. Part 1 of the questionnaire covered respondents' demographic variables viz. gender, age, education, experience in sustainable agriculture practices (SAP), farm size, crops grown and annual income. The variable gender has three categories viz. male, female and others. The variable age has four categories viz. Upto 30 years, 31 – 40 years, 41 – 50 years and above 50 years. The variable education has four categories viz. Up to HSC, Diploma/ITI, UG, and Above UG. The variable experience in SAP has three categories viz. less than 4 year, 4

– 8 year and above 8 years. The variable farm size has three categories viz. Less than 1 Hectare, 1 – 3 Hectares, and Above 3 hectares. The variable crop grown has three categories viz. Vegetables & Fruits, Grains and Both. The variable annual income has three categories viz. Less than 3 lakh, 3 – 6 Lakhs and Above 6 Lakhs. Part 2 of the questionnaire focused on independent variables Subjective norms which was measured using 5 items, government support which was measured using 5 items, supply chain support which was measured using 4 items and society support which was measured using 3 items. Part 3 of the questionnaire focused on dependent variable SAP Performance which was measured using three parameters viz. production, sales, and profit containing 7 items or statements.

DATA ANALYSIS

Demographic Descriptive

The majority of demographic descriptive analysis shows that out of the 293 respondents, 86.3% of respondents were male, 40.3% of respondents a belongs to age group of 31-40 years, 60.4% of respondents have UG education, 77.8% of respondents were married, 84.3% of respondents were having joint family status, 45.7% of the respondents were having 5 - 10 years experience in agriculture, 63.5% of respondents were having 4 - 8 years experience in SAP.

Table 1. Demographic Descriptive

Demography	Category	Frequency	Percent
Gender	Male	253	86.3
	Female	40	13.7
Age	Up to 30 yrs	77	26.3
	31-40 yrs	118	40.3
	41-50 yrs	63	21.5
	Above 50 yrs	35	11.9
Education	Up to HSC	19	6.5
	Diploma/ITI	80	27.3
	UG	177	60.4
	Above UG	17	5.8
Experience in SAP	Less than 4 yrs	78	26.6
	4 – 8 years	186	63.5
	Above 8 yrs	29	9.9
Farm Size	Less than 1 Hectare	167	57.0
	1 – 3 Hectares	100	34.1
	Above 3 hectares	26	8.9
Crops Grown	Vegetable & Fruits	59	20.1
	Grains	75	25.6
	Both	159	54.3

Annual Income	Less than 3 Lakhs	119	40.6
	3 – 6 Lakhs	148	50.5
	Above 6 Lakhs	26	8.9

Source : Primary Data; n = 293

Reliability Statistics

The study uses the Cronbach's α to measure the internal reliability of the questionnaire. From the Table 2 it is inferred that the Cronbach's α for all the factors viz. Subjective Norms, Government support, Supply Chain Support, Society Support and SAP performance were greater than 0.7. According to Guilford (1965) suggestion, when Cronbach's α is greater than 0.7, it shows that the questionnaire has a relative high internal reliability. It indicates that the reliability of the questionnaire is acceptable.

Table 2. Reliability statistics

S.No	Variables	No. of items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
1	Subjective Norms	5	0.711	0.713
2	Government Support	5	0.740	0.745
3	Supply Chain Support	4	0.723	0.728
4	Society Support	3	0.702	0.708
5	SAP Performance	7	0.745	0.751

Source: Primary Data

KMO and Bartlett's Test

KMO and Bartlett's Test of Sphericity was conducted to test the data for the sampling adequacy and fit of the data for analysis. From the table 3 it is inferred that the value of KMO statistics for all the factors viz. Subjective Norms, Government support, Supply Chain Support, Society Support and SAP performance, were higher than the acceptable limit of 0.5 (Hair et al 2010) and Bartlett's tests were significant, indicating the suitability of data for factor analysis.

Table 3. KMO and Bartlett's Test

S.No	Constructs	KMO Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
			Approx. Chi-Square	df	Sig.
1	Subjective Norms	0.615	342.057	10	.000
2	Government Support	0.627	371.587	10	.000
3	Supply Chain Support	0.688	235.185	6	.000
4	Society Support	0.643	99.129	3	.000
5	SAP Performance	0.631	334.13	21	.000
6	Overall	0.640	17530	276	.000

Source: Primary Data ; KMO - Kaiser-Meyer-Olkin Measure of Sampling Adequacy

Confirmatory Factor Analysis

Confirmatory factor analysis was conducted using smartPLS software to assess the validity of the measures. According to Hair et al (2010) item loading over .50 is very important significance, over .40 is important significance and over .30 is the minimum level of practical significance. Samples size in this study was larger than 100, which means the factor loading over .50 identifies significance on a .05 alpha level with a power level of 80 percent.

The results of confirmatory factor analysis for all the items under all the factors have item loadings over 0.5. For Subjective Norms factor the highest item loading is for items 'Friends support SAP' (0.886) and the lowest item loading is for 'Important people support SAP' (0.623). The composite reliability of the items is 0.713 and the average variance expected (AVE) is 0.724 or 72.4%. So, all the items under subjective norms factor were confirmed.

For Government Support factor of the highest item loading is for 'Govt. provide training for SAP' (0.830) and the lowest item loading is for 'Govt. provide marketing support for SAP' (0.790). The composite reliability of the items is 0.745 and the average variance expected (AVE) is 0.735 or 73.5%. So, all the items under Government Support factor were confirmed.

For Supply chain support the highest item loading is for 'Enough Consultancy network for SAP' (0.851) and the lowest item loading is for 'Enough vendors for supply' (0.721). The composite reliability of the items is 0.728 and the average variance expected (AVE) is 0.517 or 51.7%. So, all the items under Supply chain support factor were confirmed.

For Society support factor the highest item loading is for 'More people buy SA products' (0.858) and the lowest item loading is for 'People favour SAP' (0.718). The composite reliability of the items is 0.708 and the average variance expected (AVE) is 0.524 or 52.4%. So, all the items under Society support factor were confirmed.

For SAP Performance factor the highest item loading is for 'Enough production from SAP' (0.892) and the lowest item loading is for 'Good demand for SA products ' (0.772). The composite reliability of the items is 0.751 and the average variance expected (AVE) is 0.792 or 79.2%. So, all the items under SAP Performance factor were confirmed.

Correlation Analysis

Table 4 presents correlations between the variables. Many significant relationships were found among variables related to subjective norms, government support, supply chain support, society support and SAP Performance.

Table 4. Correlation Analysis

S.No	Variables	Subjective Norms	Govt. Support	Supply Chain	Society
1	Subjective Norms	1			
2	Government Support	.233**	1		
3	Supply Chain Support	.134*	.176**	1	
4	Society Support	.121*	.292**	.151**	1
5	SAP Performance	.145*	.162**	.192**	.170**

Source: Primary Data;   ** Correlation is significant at the 0.01 level (2-tailed).

The variable 'Subjective Norms' has significant positive relationship at 1% & 5% level among variables Government Support (r = .233, p < .01), Supply chain support (r = .134, p < .05), Society support (r = .121, p < .05) and SAP Performance (r = .145, p < .05). The variable 'Government Support' has significant positive relationship at 1% level among variables Supply

chain support (r = .176, p < .01), Society support (r = .292, p < .01), and SAP Performance (r = .162, p < .01). The variable Supply chain support has significant positive relationship at 1% level among variables Society support (r = .151, p < .01) and SAP Performance (r = .192, p < .01). The variable Society support has significant positive relationship at 1% level among variables SAP Performance (r = .170, p < .01). Among the independent variables, Supply Chain support has the highest correlation with SAP Performance ($r = .192$, $p < .01$) and the Subjective norms has the lowest correlation with SAP Performance ($r = .145$, $p < .05$).

Simple Regression Analysis

Simple regression analysis is carried out to test the direct individual effect of the independent variables Subjective Norms, Government Support, Supply chain support, Society support on the dependent variable SAP Performance. Table 5 shows the results of the simple regression analysis.

Table 5. Simple Regression Analysis

S.No	Variables	B	*S.E*	β	t	Sig
1	Subjective Norms → SAP Performance	0.134	0.054	0.145	2.5	0.013
2	Government Support → SAP Performance	0.141	0.05	0.162	2.802	0.005
3	Supply chain support → SAP Performance	0.157	0.047	0.192	3.336	0.001
4	Social Attitude → SAP Performance	0.137	0.047	0.17	2.946	0.003

For the variable Subjective Norms, there is a significant positive effect (β= .145, $p < .05$), on the SAP Performance. This result supports the hypothesis H1 i.e. Subjective Norms has positive influence on SAP Performance; For the variable Government Support there is a significant positive effect (β= .162, $p < .05$), on SAP Performance. This result supports the hypothesis H2 i.e. Government Support has positive influence on SAP Performance. For the Supply chain support there is a significant effect (β= .192, $p < .05$), on SAP Performance. This result supports the hypothesis H3 i.e. Supply chain support has positive influence on SAP Performance. For the variable Society support there is a significant effect (β= .170, $p < .05$), on the SAP Performance. This result supports the hypothesis H4 i.e Society support has positive influence on SAP Performance. So, all the independent variables individually have significant positive effect on SAP Performance, whereas among all the four, Supply Chain Support has highest effect on SAP Performance. The finding of this analysis is shown in fig.1.

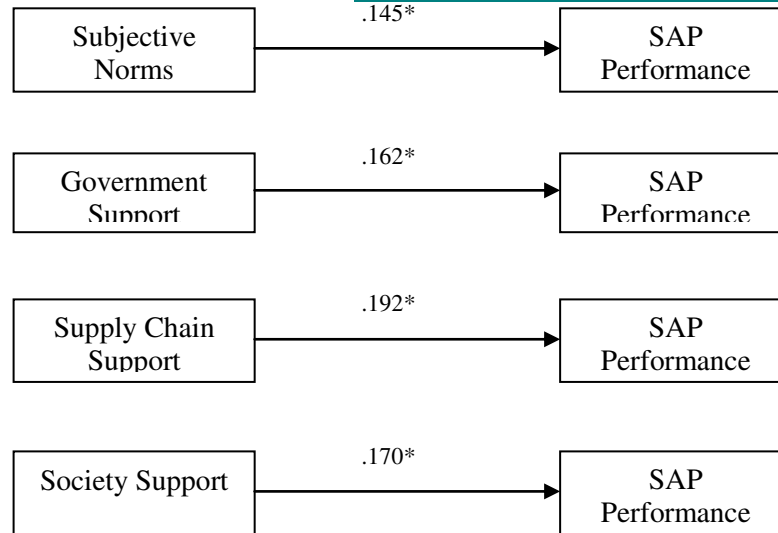| Subjective Norms	.145* →	SAP Performance
Government Support	.162* →	SAP Performance
Supply Chain Support	.192* →	SAP Performance
Society Support	.170* →	SAP Performance

Fig 2. Simple Regression Analysis

Multiple Regression Analysis

Multiple regression analysis is carried out to test the combined effect of the independent variables Subjective Norms, Government Support, Supply chain support, Society support on the SAP Performance. Table 6 shows the results of the multiple regression analysis.

Table 6. Multiple Regression Analysis

S.No	Variables	Model 1				
		B	S.E	β	t	Sig
1	Subjective Norms	0.109	0.054	0.117	2.015	0.045
2	Government Support	0.06	0.053	0.069	1.118	0.265
3	Supply Chain Support	0.132	0.047	0.161	2.803	0.005
4	Society Support	0.104	0.048	0.129	2.183	0.03
	F	6.349				
	R²	0.287				
	Sig	0.000				

The results for regression model is significant (F = 6.349, p<.05;). The results shows that for the variables Subjective Norms, Government Support, Economic Attitude, Social Attitude revealed that 28.7% of variance was explained (Adjusted R square) by variations in the four independent variables.   For the variable, Subjective Norms, there is significant positive effect (β= .117, t = 2.015, $p < .05$), on the SAP Performance. This result supports the hypothesis H1 i.e. Subjective Norms has positive influence on SAP Performance; For the variable Government Support there is no significant positive effect (β= .069, t = 1.118, $p < .05$), on SAP Performance. This result does not support the hypothesis H2 i.e. Government Support has positive influence on SAP

Performance. For the variable Supply chain support there is a significant positive effect (β= .161, t = 2.803, p < .05), on SAP Performance. This result supports the hypothesis H3 i.e. Supply chain support has positive influence on SAP Performance. For the variable Society support there is a significant positive effect (β= .129, t = 2.183, p < .05), on SAP Performance. This result supports the hypothesis H4 i.e. Society support has positive influence on SAP Performance. Among all the four, supply chain support has highest effect on SAP Performance. The finding of this analysis is shown in fig.3
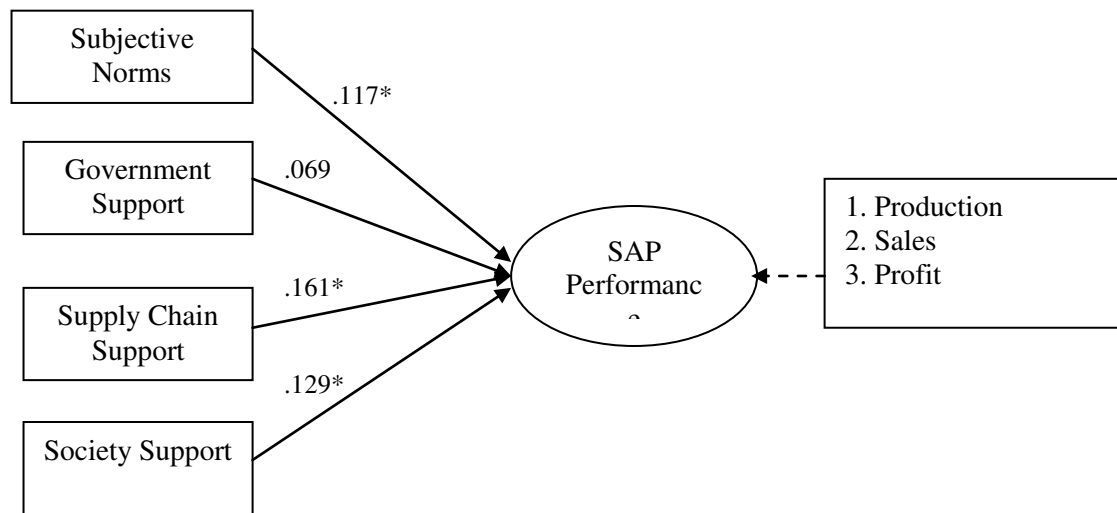

 Fig. 3 Multiple Regression Analysis

FINDINGS AND DISCUSSION

The purpose of this study was to study the effects of various aspects of supports on the SAP Performance of farmers. After reviewing various articles and paper, the core factors, which would influence the SAP Performance of farmers, were identified. The main factors identified were Subjective Norms, Government Support, Supply chain support, and Society support. Then, the effects of the identified factors on the SAP Performance were analysed.

From the correlation analysis it is observed that though all the variables have significant correlation among them, the supply chain support has the highest correlation with the SAP Performance of farmers. This finding shows that Supply Chain support is the major influence of performance of the sustainable agriculture practices of farmers. This means that higher the supply chain support for the SAP then there is the higher chances of performance of sustainable agriculture practices by the farmers.

From the simple regression analysis, it is found that all the independent variables Subjective Norms, Government Support, Supply chain support, and Society support has direct significant effect on SAP Performance. Here also it is found that among the four variables Supply Chain support has the higher effect on SAP Performance than the other three variables.

From the multiple regression analysis, to know the combined effect of the variables on the SAP Performance, the dependent variable SAP Performance was regressed on the four independent variables Subjective Norms, Government Support, Supply chain support, and Society support. The result showed that out of four variables, three variables were having significant positive

effect on SAP Performance and the variable Government Support had positive effect but not a significant effect on SAP Performance. This may be due to the fact that the farmers feel that they are getting better support from other factors viz. subjective norms, supply chain support and society support than the government support for the sustainable agriculture practices. Here also it is found that among the four variables, supply chain support has higher effect on SAP Performance than the other three variables.

The findings of this study show that the various aspects of support have significant effect on the performance of the sustainable agricultural practices of farmers. For any initiatives by any individual, the first and foremost support should come from their family members, friends, relatives and important people in their life. Subjective norms play important role in the performance of any individual. So the family members, relatives, friends should extend their enough support for the better performance of the sustainable farming. The farmers' associations and cooperative should work together and come up with various innovative schemes and strategies for the development and the improved performance of the sustainable farming practices by the farmers.

Government support is also very much important for any initiatives. So the government should come with policies that would support and promote sustainable agricultural practices. Government should provide adequate orientation and training programmes to farmers on sustainable agriculture practices. Government and other stake holders should create enough awareness about the environmental concern among the farmers. They should conduct regular or periodical orientation programme for the farmers on the environmental issues so that the farmers would get motivated to perform better in the sustainable agricultural practices. The farmers should be given training on how to get more production or yield by adopting sustainable agriculture practices. Hands on training on the various methods and techniques on the sustainable agriculture practise should be given. The supply chain network for the sustainable farming should be developed very effectively where all the supply chain partners can be linked through a common digital platform which enables the sharing of information very quickly and transparently. The farmers also should be given training on how to promote or sell their sustainable agriculture products in the market both in online ecommerce platforms and offline direct markets.

CONCLUSION

Though, many farmers started practising sustainable agriculture practices for more than a decade, but still the exact performance of the sustainable practices over the years has not yet been studies extensively. So the main focus of the study was to study the influence of various aspects of support on the SAP Performance of the farmers and the findings of the study confirms that that various aspects of support viz. Subjective Norms, Government Support, Supply chain support, and Society support has positive influence on the SAP Performance of the farmers. The present study has led the researcher to identify the various factors that influence the performance of the sustainable agricultural practices by the farmers. The various facts of the study have been presented in this paper in an appropriate manner. The outcome of this study would provide some insights to: the farmers, to motivate them to perform better in their sustainable agriculture practices; government, to formulate various policies that would support the sustainable agriculture practices of farmers so that their performance can be improved very significantly; consumers, to support and buy the sustainable agriculture products; and other stakeholders to

provide enough support to the sustainable agricultural practices. If the performance of sustainable agriculture practices improves then the standard of living of the farmers would improve to a better level.

Future Scope and Limitations

The finding of this study indicates that the proposed model worked well for the performance of sustainable agriculture practices by the farmers. This model can be used to study the performance of the sustainable practices in the other industries which are similar to agriculture industries. Some other variables like perceived risk, perceived behavioural control, adoption, knowledge and training etc., can be included in this model to study their effect on the SAP Performance. Such future studies on testing the model with different variables may increase the robustness of the model in explaining SAP Performance of farmers in different environments. The effect the variables mentioned in this research model may have substantial impact on the satisfaction of the farmers, who are following sustainable agriculture practices. So in future this model may be tested toward the satisfaction of the farmers who follow the sustainable agricultural practices.

The research has a number of limitations that must be acknowledged. Mainly this study was conducted in the district of Coimbatore, Tamil Nadu state in India and with limited number of respondents. To test the proposed model, this study used a convenience sample of respondents who were willing to respond, therefore the findings cannot be generalized universally. This study only examines the factors related to Subjective Norms, Government Support, Supply chain support, and Society support and their effect on SAP Performance. Also, there may be some other constructs that may have influence on SAP Performance which are not included in this study. For instance, the cultural and technological factors and farmers' subjective knowledge on the sustainable agriculture practices and marketing of sustainable products may also influence the SAP Performance of the farmers. These factors can be included in the future research related on this topic.

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