A STUDY ON ASSOCIATION BETWEEN DRIVERS OF EMPLOYEE ENGAGEMENT, EMPLOYEE SATISFACTION AND EMPLOYEE COMMITMENT USING STRUCTURAL EQUATION MODELING

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ABSTRACT
According to the Department of Food and Public Distribution under the Government of India, the sugar industry influences the rural way of life for around 50 million sugarcane growers. Molasses, a by-product of the sugar industry, is the primary ingredient in the production of ethanol, which is an agricultural product. When there is a glut of sugarcane on the market and prices are low as a result, the sugar business is unable to make timely payments of cane prices to the farmers who grow the crop. The Central Government imposed stock holding and turn over limitations on sugar to maintain an acceptable level for sugar prices and to ensure a steady supply of sugar for consumers. This was done with the goal of keeping sugar prices at a reasonable level. The study of the sugar industry is therefore very essential. The sugar manufacturing industry is staff driven, and as a result, it is critical to analyze structures. The present study aims to study the effect of EE on employee job satisfaction and EC. Using causal research, the association between Employee engagement (EE), employee satisfaction (ES) and employee commitment (EC) are studied. The relation is established using structural equation modeling.
Keywords: Employee engagement, employee satisfaction and employee commitment

Introduction
The sugar business is a significant part of the agricultural sector that influences the way of life in rural areas for over 50 million sugarcane growers and approximately 5 lakh workers who are directly employed in sugar mills. Additionally, employment opportunities are created in a variety of ancillary businesses related to transportation, trading, the servicing of machinery, and the provision of agricultural inputs. Both the largest producer and consumer of sugar in the world can be found in India. Brazil is India's nearest competitor in the sugar industry. The annual production of the Indian sugar industry is currently valued at around 80,000 crores of rupees. As of the 31st of July 2017, the country has a total of 732 operational sugar factories, each of which had adequate crushing capacity to generate around 339 lakh MT of sugar. The capacity is split evenly between units belonging to the private sector and those belonging to the cooperative sector. In addition, a person who is paid to work for another person or company is referred to as an employee of that person or company. The concept of a worker's "EE," which refers to how enthusiastic and committed they are to their work, originates in the field of human resources. EE measures how enthusiastic and dedicated a worker is toward their employment (HR). Employees who are engaged in their jobs and the performance of the organization as a whole care about both, and they have the impression that the contributions make a difference in both areas. A worker who is driven by factors other than financial gain is said to be engaged in their work. They may even be under the impression that their level of contentment is inversely proportional to the amount of work they get done and, as a result, necessary to the development of their company.

The study aims to review and compare various EE practices in different cooperative sugar industries. The researcher also focuses on studying the factors of EE, ES and EC. Based on basic factors, the study attempt has been made to establish a relationship between EE, ES and EC. Researcher also focuses to determine the important EE drivers for organizations performance in cooperative sugar industry.

Literature Review
Employees are an essential part of every business. If a company wants to be competitive, it must maintain a high level of employee involvement in all tasks that advance its objectives. The success of the company and its goals

must inspire everyone who works there to be enthusiastic, driven, and committed. There must be a significant intersection between what the employer expects of the employee and what the employee expects from the employer. The term "EE" was first used by Kahn in 1990 and was then published in a scholarly journal. Since then, it has evolved and proven that keeping employees engaged at work is of the biggest importance among the numerous resources available to businesses.

People's perceptions of engagement and disengagement are influenced by their own definitions of engagement and disengagement, as well as their level of participation in their professional function and personally in those they employ and express themselves. Energy, involvement, and efficacy are the three components that define engagement, in contrast to the three characteristics of burnout that are fatigue, cynicism, and a lack of feeling like one's efforts are making a difference.

Organizational outcomes
Employee retention
Both Levinson (2007) and Demourouti. (2001, quoted in Sonnentag, 2003) concluded that involvement in one's place of employment does, in fact, positively correlate with commitment to the organization. Research conducted by Levinson (2007) and Demourouti (2001) came to the same conclusion: there is a positive correlation between EE at work and organizational commitment. According to Levinson (2007a), employees who are content in their jobs are more likely to remain with the organization in which they are employed. According to Demourouti (2001)'s research, EE at work is correlated favorably with organizational commitment.

Employee productivity
Employees whose motivation derives from causes external to themselves tend to have higher levels of productivity. Some examples of such reasons include involvement with their work and company. When compared to their colleagues who are disengaged, they exhibit a more acute attention to detail and a higher level of internal motivation. This suggests that they work in a manner that is both more productive and always keeps the success of the business in mind.

EC
Organizational commitment is complex to describe, and the definitions found in the commitment research lacks consensus. Nevertheless, Meyer and Allen (1991) established a three-component model of commitment that has a significant amount of empirical validity. Affective commitment refers to an individual's emotional ties to his or her organization, while continuation commitment refers to an awareness of the costs associated with leaving one's organization, and normative commitment refers to the individual's adherence to the organization's values and standards (feeling an obligation to stay with the organization). According to (Meyer & Allen, 1997) affective commitment may be thought of as the desire to remain with an organization, continuity commitment can be thought of as the necessity to remain, and normative commitment can be thought of as the feeling that one ought to remain with the organization. The notion that commitment is a key criterion variable for evaluating how organizational change affects the organization-employee relationship is relevant to this study (Armenakis & Bedeian, 1999). The state in which individual employees match themselves to the occupation is defined as commitment. Job, responsibility, and in this way, they are completely dedicated and strive to attain organizational goals and objectives. Employees that are engaged and committed are interested in their jobs and devoted to tasks and challenges to attain the goals and objectives. It will result in highly productive employees who will be recognized as the organization's assets.

ES
Another important parameter in the study of EE is the ES. ES reflects how well an individual's interests and aspirations are met and how other employees perceive this. Different academics define ES differently, but it's commonly seen as *"the scope of the work and all the favorable sentiments about the work environment"* (Staples and Higgins, 1998) and can only be achieved if the parties view each other as consumers to fulfil. In recent years, organization and management behavioral research have emphasized that ES is crucial both for employee and the organization. Finding strong and crucial relationships between absenteeism, employee turnover, and organizational loyalty in several research have led to a greater understanding of the relevance of ES. Many researchers have questioned whether employee happiness and life satisfaction are related (Chacko, 1983; Tait, 1989; Howard and Frink, 1996). Many senior managers have pushed their companies to focus on ES.

Structural Equation Modeling:
In the field of multivariate statistical analysis, SEM is a tool that is used to investigate structural relationships. To investigate the structural connection that exists between measured variables and latent constructs, this technique combines component analysis and multiple regression analysis. This approach is used by the

researcher because it allows for the estimation of a wide variety of interdependent relationships within a single investigation. This strategy makes use of two categories of variables, namely endogenous variables, and exogenous variables. Endogenous variables are identical to dependent variables, and their values are identical to those of the independent variable.

Methdology

A. Objectives

To study the effect of EE on employee job satisfaction and EC.

B. Hypothesis

H_1: There is a significant positive effect of EE on employee job satisfaction.

H_2: There is a significant positive effect of EE on EC.

C. Sample design and Sample Size

Sample size determination using mean method. Sample size was determined using sample size determination by mean method. Variables in study were measured using a 5-point measurement scale, hence the mean method was adopted. Formula

$$N = \frac{z^2 * s^2}{e^2}$$

Where, 'z' is the standard score associated with confidence level (95% in the current case). Hence standard scores equal to 1.96 (borrowed from normal table). 'S' is the variability in the data set, computed as a ratio of range / 6. Range is equal to 5-1 = 4 (the difference between minimum and maximum value in the 5-point scale). 6 refers to ±3 standard deviation values on the X axis of the standard normal curve, which takes in all the data set in study.

Hence S = 4/6 = 0.66

E is the tolerable error = 6% (in the current study).

Sample size n = $\frac{1.96^2 * 0.66^2}{0.06^2}$ = 463

To deal with non-responses a size of 10% respondents is taken as buffer

463*0.1 = 46, 463 + 46 = 509

Hence, questionnaires were distributed to 509 employees of sugar factories, however 14 questionnaires were discarded for incompleteness, hence the final sample size is 495.

D. Research design

The study is causal in nature elaborating on the DEE on EE, ES and EC.

E. Data Collection

For the present research a structured questionnaire was used as a tool to collect primary data. The target respondents were approached through an internet-based and physical survey. To reach till the respondents E-copies of the questionnaire were distributed in Google forms to get prompt responses. Secondary data was collected for literature review and theorization from various sources like books, journals, magazines, internet articles, Bank Website etc.

F. Constructs under the study.

The tables below show the constructs under the study and codes used for the research.

DEE	
Job satisfaction	JS
Family-friendliness	FF
Cooperation and communication	CC
Health and safety	HS
Pay	Pay
Conditions and benefits	CB
Equal opportunities and fair treatment	EOFT
Performance and appraisal	Pay
Immediate management and training	IMT
Development and career	DC

TABLE I.   DEE

EE	
At my work, I am bursting with energy and enthusiasm (EE1)	EE1
At my job, I feel strong and energized (EE2)	EE2

I am energetic about my job (EE3)	EE3
My work motivates me (EE4)	EE4
I feel like going to work when I wake up in the morning (EE5)	EE5
I feel cheerful when I'm working seriously (EE6)	EE6
I am pleased with the work that I do (EE7)	EE7
I'm completely absorbed in my task (EE8)	EE8
When I am working, I easily get carried away (EE9)	EE9

TABLE II.   EE

ES	
How satisfied are you with your job? (ES1)	ES1
How would you rate the culture of your company? (ES2)	ES2
How likely would you leave for a 10% raise from another company? (ES3)	ES3
How likely are you to refer our company's products or services to a friend or colleague? (ES4)	ES4
What do you think of your customer service? (ES5)	ES5
How would you rank your manager's performance? (ES6)	ES6
How much room do you have for professional development in this company? (ES7)	ES7
How would you rank your co-workers and team members? (ES8)	ES8
How would you rate your organization's prior recognition efforts? (ES9)	ES9
How esteemed you feel at work? (ES10)	ES10

TABLE III.   ES

EC	
I am willing to invest in extraordinary arrangement of energy past that regularly expected to assist this association with being fruitful (EC1)	EC1
I feel almost no reliability in this organization (EC2)	EC2
To continue working for this organization, I would take practically any type of job assignment. (EC3)	EC3
I find that my values and the values of the organization are extremely comparable. (EC4)	EC4
I am delighted to say that I am a member of this organization. (EC5)	EC5
I am incredibly happy that I pick this association to work for over others I was considered at the time I joined (EC6)	EC6
I find it difficult to agree with this organization's ideology on major issues affecting its employees on a regular basis. (EC7)	EC7

TABLE IV.   EC

Data Analysis

The section below discusses the descriptive of the constructs in the research. Based on descriptive data, a structural equation model is proposed considering the impact of DEE on EE, ES and EC. Moreover, the impact of EE on ES and EC is studied. Lastly, association between ES and EC is found.

	N		$\bar{x}$	σ	Skewness	Std. Error of Skewness	Kurt	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing								
JS	495	0	3.97	1.149	-1.395	0.11	1.353	0.219	1	5
FF	495	0	4.07	0.989	-1.245	0.11	1.216	0.219	1	5
CC	495	0	4.03	1.065	-1.461	0.11	1.803	0.219	1	5
HS	495	0	3.96	1.12	-1.441	0.11	1.595	0.219	1	5
Pay	495	0	4.03	1.14	-1.498	0.11	1.659	0.219	1	5
CB	495	0	4.03	1.122	-1.585	0.11	1.997	0.219	1	5

	N Valid	Missing	$\bar{x}$	σ	Skewness	Std. Error of Skewness	Kurt	Std. Error of Kurtosis	Minimum	Maximum
EOFT	495	0	4.04	1.097	-1.472	0.11	1.711	0.219	1	5
Pay	495	0	4.01	1.147	-1.438	0.11	1.434	0.219	1	5
IMT	495	0	3.96	1.129	-1.514	0.11	1.77	0.219	1	5
DC	495	0	3.99	1.18	-1.439	0.11	1.37	0.219	1	5

TABLE V.   DEE

	N		$\bar{x}$	σ	Skewness	Std. Error of Skewness	Kurt	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing								
EE1	495	0	4.1	1.116	-1.561	0.11	1.883	0.219	1	5
EE2	495	0	4.04	1.053	-1.359	0.11	1.503	0.219	1	5
EE3	495	0	3.98	1.098	-1.37	0.11	1.45	0.219	1	5
EE4	495	0	3.99	1.143	-1.444	0.11	1.519	0.219	1	5
EE5	495	0	4.02	1.113	-1.492	0.11	1.748	0.219	1	5
EE6	495	0	4.06	1.092	-1.426	0.11	1.55	0.219	1	5
EE7	495	0	4.02	1.1	-1.532	0.11	1.916	0.219	1	5
EE8	495	0	4.06	1.12	-1.542	0.11	1.83	0.219	1	5
EE9	495	0	4	1.133	-1.527	0.11	1.801	0.219	1	5

TABLE VI.   EE

	N		$\bar{x}$	σ	Skewness	Std. Error of Skewness	Kurt	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing								
ES1	495	0	3.99	1.118	-1.482	0.11	1.716	0.219	1	5
ES2	495	0	4.03	1.027	-1.358	0.11	1.616	0.219	1	5
ES3	495	0	3.99	1.015	-1.263	0.11	1.388	0.219	1	5
ES4	495	0	3.91	1.093	-1.402	0.11	1.591	0.219	1	5
ES5	495	0	4.05	1.127	-1.487	0.11	1.683	0.219	1	5
ES6	495	0	3.99	1.105	-1.391	0.11	1.489	0.219	1	5
ES7	495	0	3.97	1.059	-1.403	0.11	1.685	0.219	1	5
ES8	495	0	4.11	1.098	-1.504	0.11	1.749	0.219	1	5
ES9	495	0	3.99	1.059	-1.496	0.11	2	0.219	1	5
ES10	495	0	3.98	1.123	-1.481	0.11	1.703	0.219	1	5

TABLE VII.   ES

	N		$\underline{x}$	σ	Skewness	Std. Error of Skewness	Kurt	Std. Error of Kurtosis	Minimum	Maximum
	Valid	Missing								
EC1	495	0	4.08	1.143	-1.467	0.11	1.519	0.219	1	5
EC2	495	0	4	1.016	-1.282	0.11	1.425	0.219	1	5
EC3	495	0	4.04	1.039	-1.386	0.11	1.675	0.219	1	5
EC4	495	0	4.02	1.15	-1.472	0.11	1.543	0.219	1	5
EC5	495	0	4.03	1.145	-1.453	0.11	1.529	0.219	1	5
EC6	495	0	3.93	1.132	-1.4	0.11	1.437	0.219	1	5
EC7	495	0	4.16	2.135	12.925	0.11	245.79	0.219	1	44

TABLE VIII.   EC

In marketing research, the second-generation multivariate data analysis technique known as structural equation modeling (SEM) is frequently employed since it allows for the testing of additive and linear causal models that are theoretically supported (Chin, 1996; Haenlein & Kaplan, 2004; Statsoft, 2013). To prioritize resources and better serve their clients, marketers can use SEM to graphically evaluate the links between relevant variables. SEM is perfect for solving business research issues since it may be utilized with unobservable, challenging ways to quantify hidden variables.
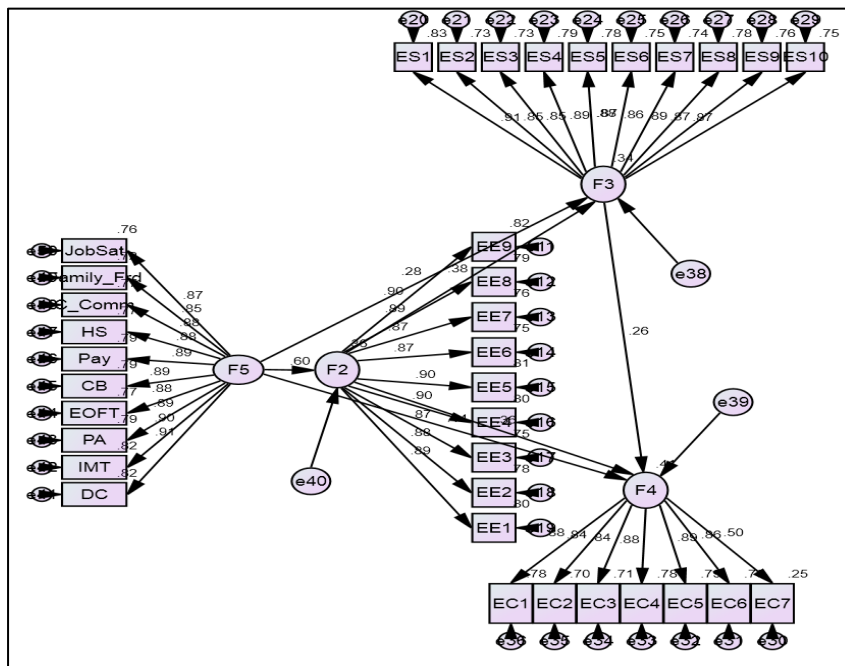

Fig. 2 SEM

Correlation Coefficient and path analysis:
The coefficient of determination measures the structural model's prediction accuracy by estimating the endogenous construct's total effect size and fluctuation. In this study, the inner route model for F2, F3, F4 and F5. R^2 of 0.75 is regarded as substantial, 0.50 is moderate, and 0.26 is weak. So, the R^2 was moderate in this case.

Endogenous variable	path	exogenous variable	regression coefficient (b)	Std Regression Weight (B)	SE	C.R.	P	Result
F2	<---	F5	0.559	0.599	0.039	14.428	***	Sig.
F3	<---	F2	0.385	0.377	0.051	7.629	***	Sig.
F3	<---	F5	0.262	0.275	0.046	5.643	***	Sig.
F4	<---	F2	0.384	0.357	0.062	6.186	***	Sig.
F4	<---	F3	0.273	0.259	0.053	5.14	***	Sig.
F4	<---	F5	0.144	0.143	0.05	2.89	0.004	Sig.

TABLE IX REGRESSION

Construct	correlation	Construct	r	r squared	AVG (AVE)
F2	<-->	F3	0.542	0.293764	0.774
F2	<-->	F4	0.583	0.339889	0.731
F2	<-->	F5	0.599	0.358801	0.781
F3	<-->	F4	0.524	0.274576	0.721
F3	<-->	F5	0.501	0.251001	0.771
F4	<-->	F5	0.487	0.237169	0.728

TABLE X PATH COFFICIE

Conclusion

THE RESEARCH DISCUSSED THE IMPACT OF DEE ON EE, ES AND EC. MOREOVER, IMPACT OF EE ON ES AND EC IS STUDIED. LASTLY, ASSOCIATION BETWEEN ES AND EC WAS FOUND.

As per the literature, the factors influencing DEE are mentioned in table I. They are the focal point of the study. It was found that, an organized and systematic EE practices can increase ES. Moreover, EE and recognition, directly increases commitment of employees towards work. There is a moderate association between ES and EC. Overall, it can be concluded that there is a positive impact of EE on ES and EC is studied.

The SEM model aids to link the constructs. The focal aim was to link and study impact of DEE(F5) with EE (F2), ES (F3) and EC (F4). The Path coefficients in table X clearly show moderate correlation between DEE, EE, ES and EC. R squared Value of F2 and F3 constructs is moderate and that of F4 is week.

Thus, the study concludes that DEE have a moderate impact of on EE, ES and EC

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