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## Article

### Balanced scorecard: the key to employee well-being : the impact of balanced scorecard on employee well- being : the case of State of Michigan-USA

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# **BALANCED SCORECARD: THE KEY TO EMPLOYEE WELL-BEING - THE IMPACT OF BALANCED SCORECARD ON EMPLOYEE WELL-BEING: THE CASE OF STATE OF MICHIGAN-USA**

*CEREN PERI CIGNITAS***Abstract:**

In today's competitive environment, organizations recognize that employee happiness and performance management tools are a prominent factor in achieving success and goals. According to many researchers, ensuring the satisfaction of employees increases organizations' performance by providing maximum efficiency. The Herzberg job satisfaction theory is the most well-known theory and consists of two parts, hygiene (internal) and motivational (external). Hygiene factors, which are success, self-determination, job description, and responsibility, improve job satisfaction. On the other hand, motivational factors provide job satisfaction through business policies, salaries, management, supervision, business lines, interpersonal communication, status, job security, and communication with the top management, and their lack could lead to dissatisfaction.

The objective of this study was to research the impact of Balanced Scorecard on employee's well-being, its theoretical frameworks and concepts, and empirical researches. The research investigated relationship between BSC and organization performance through monetary and non-monetary perspectives and effect of BSC on well-being. Non-monetary analysis has been done through the questionnaire of State of Michigan employees and simple random sampling technique was used in the study. In data analysis, job satisfaction survey, organizational commitment survey, positive leader survey and BSC survey were examined. Data analysis has done with SPSS 28.0 statistical program. The correlation coefficient was calculated to determine the severity and direction of the relationship between the scores obtained from the scales. Monetary (financial) analysis has been done through the financial data between 2000 to 2020 of State of Michigan. Multicollinearity in Regression Analysis has been used to measure financial performance of organization. The findings of this study are that BSC significantly increased organizational performance and had a significant impact on employee well-being.

**Keywords:**

Balanced Scorecard, Positive Management, Employee Well-Being

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## INTRODUCTION

Happiness is defined as the result of issues that give life satisfaction to people in all aspects such as coping with the difficulties encountered in life, self-realization. The concept of well-being, which includes mental and physical health, consists of three main components: **psychological well-being, subjective well-being, and workplace-related well-being**. Emotional well-being, according to the work carried out by Warr (Warr, P. 1990) has a more comprehensive infrastructure than psychological well-being. Emotional well-being regarding work is also described on two separate bases: anxiety–comfort and unhappiness–euphoria. Myers and Diener (1995) defined the concept of well-being as an optimal health-oriented lifestyle in which the body, mind, and spirit combine to enable an individual to live fully functionally in the social and natural environment.

**Subjective Well-Being:** Subjective well-being, which includes pleasant emotional experiences (Diener, 2009), means an excess of positive emotions compared with negative emotions and satisfaction from one's whole life. Veenhoven (1996) defined subjective well-being as the judgement of an individual's quality of life as a whole. According to the simple hedonic theory, an individual's quality of life is measured by the difference between the number of good moments and the number of bad moments (Seligman, 2002). (Larsen & Eid, 2008).

### **Psychological Well-Being**

Developed with theories such as Ryff's (1989) psychological well-being approach and Ryan and Deci's (2000) self-determination theory. While subjective well-being includes general assessments of individuals' quality of life based on their own personal standards, psychological well-being examines perceived development in the face of the existential challenges of life (for example, pursuing meaningful goals, growing and developing as a person, and establishing quality bonds with others) (Diener, 1997).

Many different variables, such as personality, gender, age, education level, marital status, and living conditions, have been found to be associated with well-being (Diener, 2009). Lyubomirsky (2007) divided the factors affecting well-being into three classes: 50% of Equilibrium point factors (genetic factors = wisdom, courage, humanity, justice, moderation, and transcendence.), 10% of Conditions factors (marital status, gender, culture, geographical location, religion, life events, welfare level, education, job opportunity, health, income, and social support) and 40% of Conscious activities (optimism, doing good, establishing social relationships, being forgiving, focusing on purpose, physical activities, and tending to spirituality)

### **Positive Psychology**

Positive psychology is an approach that is theoretically based on Seligman (2002), who aimed to understand positive emotions, create power and virtue, and provide guidelines for finding Aristotle's understanding of the good life. The positive view in psychology was fuelled by the work of Deci and Ryan (1985), Erikson (1963, 1982), Jahoda

(1958), Maslow (1954, 1962), Rogers (1951), Ryff and Singer (1996), and Vaillant (1977). Martin Seligman, who adopted the perspective, became the president of the association in 2000 and proposed the positive psychology approach, initiating a new era in psychology. Positive psychology has recently gained prominence in the field of organizational management. The happiness of employees is increasingly becoming the focus, especially in terms of its effect on their performance. The measurements of employee engagement and happiness/well-being models are often used.

### **Positive Organizational Psychology**

According to Seligman and Csikszentmihalyi (2000), positive organizations are the organizational level that leads individuals to adopt better citizenship behaviours, such as responsibility, altruism, democracy, tolerance, work ethics, and virtues. Positive organizational psychology involves the positive subjective experiences, positive personal characteristics in organizations, and positive institutions (Donaldson, 2010). The work environment, which we refer to as an organization's culture, plays an important part in shaping and directing people's behaviour. In relation to responsible leadership, the prevalent ethical culture and the importance of corporate social responsibility, as perceived by the employees within an organization, are important levers for creating a socially responsible organization (Voegtlin, Patzer, & Scherer, 2012) (Fisher, 2010).

### **Positive Organizational Behaviour**

Positive organizational behaviour concerns the strengths and psychological capacities of human resources that can be effectively managed, measured, and developed in a positive way to improve performance in organizations. Positive organizational behaviour focuses on developing employees' strengths and psychological abilities.

**Organizations' Welfare:** The considering prosperity, eudaemonism views welfare as resulting from the involvement of a person in noble work, high moral values, meaningful and the generation of progress" (Ryan and Deci, 2001).

### **Components of Organizational Happiness**

The components of workplace happiness can be defined as job satisfaction, organizational commitment, work engagement, features of the working environment, job stress, fewer negative feelings, and so on. The work has been defined as 'positive, satisfying mood about work, which consists of the sub-dimensions of resilience, commitment, and concentration. The components of passion for work are organization-based resources, such as autonomy, feedback, social support, and organizational climate, as well as individual resources, such as optimism and self-efficacy. (Fisher, 2010).

## **Employee Well-Being**

According to researcher, there are three levels of happiness in work life. The first is temporary happiness at work (a short-term emotional state), the second is happiness at the individual level (job satisfaction, commitment, and emotional state), and the third is happiness at the unit level (Fisher, 2010). Workplace happiness is individuals' level of satisfaction regarding their work and work life. Individuals' occupation affects them economically, psychologically, and physiologically. Individual factors, such as personal characteristics, level of perception, psychological factors that can cause stress, and emotional intelligence, all affect well-being in the work environment (Christakis & Fowler, 2008; Buyukbay, 2017; Warr, 1994).

## **Job Satisfaction**

The Herzberg job satisfaction theory is the most well-known theory and consists of two parts: hygiene (internal) and motivational (external). The hygiene factors, that is, success, self-determination, job description, and responsibility, improve job satisfaction. On the other hand, the motivational factors provide job satisfaction through business policies, salaries, management, supervision, business lines, interpersonal communication, status, job security, and communication with top management, and their lack leads to dissatisfaction. (Fisher, 2010).

## **Organizational Commitment**

Organizational commitment consists of three parts: emotional commitment, continuation commitment, and normative commitment. Emotional commitment means that employees are happy to continue working for that organization. Continuation commitment refers to employees' awareness about the costs of leaving the organization and acts as a kind of mandatory continuation. Normative commitment is employees' feeling about the philosophy of continuing work. Employees with high normative commitment are focused on staying with the organization. (Fisher, 2010).

## **Work Engagement (Thriving, Vigour, Flow, Mood, and Motivation)**

Job engagement is an important motivational variable for organizations. Engagement is the 'positive affect associated with the job and the work setting connoting or explicitly indicating feelings of persistence, vigour, energy, dedication, absorption, enthusiasm, alertness, and pride. A positive workplace culture improves teamwork, raises morale, increases productivity and efficiency, and enhances the retention of the workforce (Vischer, 2008). The numerous researchers have demonstrated that happy employees tend to be more productive as well as more creative and innovative because they generate new ideas and try to perform the same job in different ways to save time and improve their effectiveness. "Pryce-Jones (2010) supported this idea and showed the enormous impact of happy employees in his in-depth research" (Stoia, 2016):

## Balanced Scorecard

In competitive environments, organizations have started to use performance management and strategic management tools to maximize their performance. Balanced scorecard (BSC) method provides inputs that facilitate strategic planning while measuring the performance of an organization. The balanced scorecard is an approach that allows its users to break down the business and financial aspects of an organization into various simple factors and actionable elements.

The concept of the Balanced Scorecard (BSC) was developed in the early 1990s as a new approach to performance measurement due to problems of short-termism and past orientation in management. As a reaction, Kaplan and Norton suggested a new performance measurement approach that focuses on corporate strategy (Kaplan and Norton, 1992, 2001). The BSC measures an organization's performance from four perspectives: the financial, customer, internal business process, and learning and growth perspectives (Figge & Hahn, 2002). The metrics selected for the scorecard are a tool for leaders to use to communicate the results and performance factors that will enable their organization to achieve its mission and strategic goals in the interests of the employees and internal–external partners. Putting strategy and vision at the centre is important for BSC implementation (Valiris, Chytas, & Glykas, 2005). The adapted scoreboard allows the framework or operations of the financial unit to be transformed into a rational internal element of measures as it is important for the financial techniques that are implemented.

### Perspectives of BSC

The BSC measures an organization's performance from four perspectives, specifically the financial, customer, internal business process, and learning and growth- help organizations to understand and achieve their organizational objectives (Kaplan & Norton, 1996).

- **Financial Perspective**

The financial perspective shows the long-term objectives of an organization to improvement of profitability and other financial objectives with determining the business strategy: fast growth, support, and financial results. (Kaplan & Norton, 1996).

- **Customer Perspective**

This perspective takes into account the capacity of a business to secure qualitative goods and services for its clients and the effectiveness with which it offers these services, and it addresses the concerns of customers to develop ongoing support. The measures taken by customers satisfaction, may include customer loyalty and the number of new customers (Kaplan & Norton, 1996).

- **Internal Business Perspective**

This is achieved by identifying the customers' needs and developing new products and services accordingly through innovation to meet the customers' demands (Kaplan & Norton, 1996). A productive organization should work like a modified all-round machine.

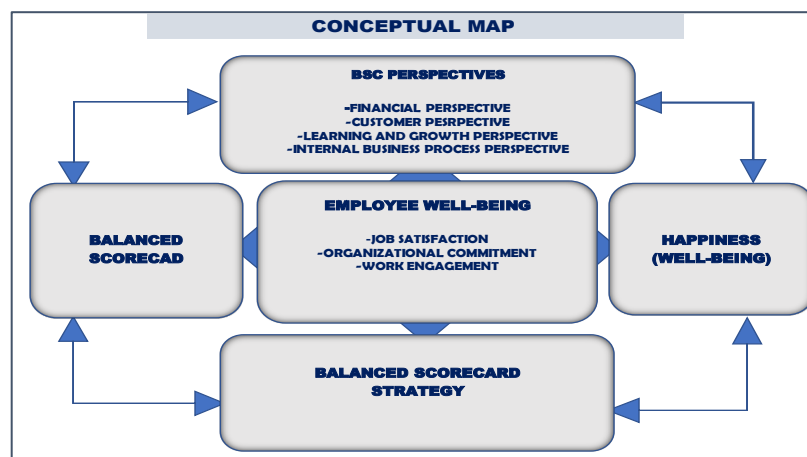
### • Learning and Growth Perspective

Kaplan and Norton (1996, 2000) identified three sources of business learning and growth: people, information systems, and organizational processes. The learning and growth perspective captures the ability of employees, information systems, and the organizational alignment to manage the business and adapt to change by skilled and motivated employees, supplied with accurate and timely information, are driving them (Armstrong, M. & Baron, A. 2004), Kaplan and Norton (1992) emphasized that 'learning' is more than 'training'; it also includes things like mentors and tutors, ease of communication, and technological tools (Opiyo, 2010). Measures in this class include, the turnover rate, long periods of preparation of workers, the extent of cycle updates, and the number of new elements.

### Objectives of the Research

Employees are known to be a key factor of a successful organization. This study aims to identify the factors that affect employees' well-being. The main problem that is the focus of this study is the impact of the BSC on employees' well-being according to certain variables. This research is to define happiness in the context of the balanced scorecard and employee well-being and investigate the Effect of Balanced Scorecard on Employees well-being by using Michigan State employee surveys. The following objectives of this research are developed:

### Conceptual Map



### LITERATURE REVIEW

**Performance:** In the literature the performance is the qualitative or quantitative expression of the level of achievement of actions taken by individuals, organizations, and systems to achieve the predetermined goals and



objectives (Davis & Doley, 2008). There are two important objectives for performance evaluation. The first of these objectives is to have information about business performance. The other objective is to provide feedback on the extent to which employees approach the standards identified in their job descriptions and job analyses (Erdogan, 2013). According to Aziz Erdogan (2013), the criteria used in performance measurement in organizations are quality, efficiency, profitability, cost, innovation, customer satisfaction, and employee satisfaction.

### **Balanced Scorecard**

The BSC is used extensively in business and industry, government, and non-profit organizations worldwide. In the late 1970s and 1980s, researchers identified the deficiencies of accounting-based performance measurement systems and emphasized their inadequacies. In the late 1980s and early 1990s, dissatisfaction with traditional performance measurement systems provided the basis for ‘balanced’ and ‘multidimensional’ performance measurements. The BSC, developed by Kaplan and Norton, is among the most widely known of the integrated performance measurement systems. Since it was first introduced by Robert Kaplan and David Norton, the BSC has attracted widespread interest from academics and businesses across different industries, from manufacturing to services and from the public to the private sector (Thananchayana, 2018).

- Literature about the relationship with organizations’ performance: “Davis and Albright (2003); Hoque and James (2000). Hoque and James (2000) surveyed 66 Australian manufacturing firms ( $66/188 = 35.1\%$  response rate) and found support for the hypothesis that larger organizations tend to make more use of the balanced scorecard, suggesting that greater BSC usage is associated with improved performance. Their results indicate a significantly positive relationship between the usage of typical BSC measures and superior performance” (Davis & Albright, 2003).
- Literature about effectiveness as a device for strategy communication and management control: In 2001, Malina and Selto investigated the effectiveness of the BSC in communicating strategic objectives and serving as a management control device. They indicated an indirect relationship between the BSC’s management control function and the improved performance on BSC measures, stating that the managers in their study perceived that improved performance on the BSC would lead to improved efficiency and profitability.
- Literature about criticism: Epstein and Manzoni (1997); Kasurinen (2002); Norreklit (2000, 2003).
- Literature about findings: Chung, Chao, Chen, and Lou (2016) investigated the Balanced Scorecard of Sustainable Management in the Taiwanese bicycle industry and confirmed that the introduction of a sustainable management strategy into the bicycle industry should involve five major categories: financial, customer, internal business processes, learning and growth, and sustainable development.
- Thananchayana and Gooneratne (2018) investigated how the balanced scorecard (BSC) has been successfully implemented and institutionalized in a leading telecommunications company in Sri Lanka (Telinotec) through

improvements over two phases. The manager noted, ‘we use the BSC as a key tool to measure departmental, individual and organizational performance.

Over the years, there has been a stream of BSC research, and it has been subjected to praise as well as to criticism. While Malina and Selto (2001) suggested that the BSC is an effective tool for communicating strategy, the survey study by Hoque and James (2000) revealed that organizational performance improves with the use of the BSC. Researchers have noted that a positive relationship exists between size and BSC usage (Hoque & James, 2000). Madsen and Stenheim (2015) noted that the interpretation and use of the BSC varies across scholars and practitioners, and, due to the interpretive and practice variations, different organizations have implemented it for different purposes, such as to improve performance, to improve strategic management, to assist managers in focusing on strategy, structure, and vision, and to understand and guide strategy implementation.

### **Employee Well-Being (Organizational Happiness)**

The search for happiness started with the Ancient Greeks, but it has only been studied and measured in a systematic way within recent years. According to Aristotle, happiness is the ultimate human purpose of life on Earth.

- Happiness involves subjective well-being, satisfaction, utility, well-being, and welfare interchangeably. The measurement and analysis of these various notions of subjective well-being have a half-century history in the social sciences (see the bibliographical survey by Veenhoven (1996), which contains about 2,500 references). In work on the quality of life and the standard of living, the use of subjective indicators such as happiness has also received increasing attention. Veenhoven (1993) provided a valuable classification of queries on well-being, their wording, and response groupings.
- Subjective well-being, happiness, and life satisfaction: Psychologist Ed Diener has been particularly influential in conceiving and developing contemporary notions of psychological and subjective well-being.
- According to Fisher (2010), there are three levels as transient level, person level, and unit level which to construct happiness in organizations.
- Şirli Ender-Büyükbay (2017) stated well-being in seven dimensions: career success, emotional intelligence, psychological capital, engagement, general satisfaction, work–life balance, and authentic functioning.
- Zümral Gultekin’s (2019) study was carried out on 623 mail distributors working in 5 cities in Turkey. It was found that the perceived job insecurity instrument influences variable vocational commitment and that professional commitment affects both psychological well-being and performance.
- Claypool, K. (2017) – “Organizational Success: How the Presence of Happiness in the Workplace Affects Employee Engagement that Leads to Organizational Success” study` result showed happiness in the work place and employee engagement that leads to organizational success in both private elementary and secondary K-12 teacher was significantly positively correlated to ( $p = 0.01$ ,  $r = 0.36$ ). The positive

correlation suggested that the employee engagement in the workplace would increase if happiness in the workplace also increased.

- Christian Krekel & George Ward & Jan-Emmanuel De Neve (2019) – “Employee Wellbeing, Productivity, and Firm Performance” study has examined 1,882,131 employees survey and study result showed: significant, strong positive correlation between employees' satisfaction with their company and employee productivity and customer loyalty, and a strong negative correlation with staff turnover. Ultimately, higher wellbeing at work is positively correlated with more business-unit level profitability.
- Hoang Ho, & Kuvaas Bård (2019)- “Human resource management systems, employee well-being, and firm performance from the mutual gains and critical perspectives” study was based on a sample of 14,384 employees nested within 1,347 firms. The result of study showed: In isolation, the employee well-being had a significant and positive association with firm performance ( $b = .05$ ,  $p < .001$ )

### **Empirical Study of BSC and Employee Well-being**

- Opiyo (2010)- “Influence of BSC on Employee Job Satisfaction: A survey of Cooperative Bank of Kenya Ltd” study was conducted to assess the application of balanced scorecard on cooperative bank 1,947 employees job satisfaction. The employees feeling about the jobs to a large extent were: the relationships you have with other people at work, the actual job itself, the degree to which you feel 'motivated' by your job.
- Narayanamma, P. Lakshmi (2017)- “A study on Impact of BSC implementation in Job Satisfaction of Employees in Selected Public and Private Sector” study` questionnaires were distributed to 250 respondents in selected public (125) and private (125) sectors. There is positive correlation between balanced scorecard and job satisfaction.
- LEMMA, A (2018)- “An assessment on the implementation of BSC with reference to employee performance: The case of Oromia Regional Health Bureau” study involved 214 employees working at the ORHB. Result summary, the implementation of BSC at least has helped the Bureau in establishing a planning and measurement system that drew a tangible experience among the general staff. The BSC has somehow helped them to give due attention to their customers they are serving.

## **METHODOLOGY**

### ***-UNIVERSE AND SAMPLE OF THE RESEARCH***

The universe of the research consists of 27334 employees working at the State of Michigan. Simple random sampling technique was used in the study. Accordingly, 100 employees representing 27334 employees were randomly selected from the sample. In formulas;

$N$  = Number of individuals in the universe (27334: Number of Employees of the State of Michigan 2020)

$n$  = Number of individuals to be sampled (96)

$p$  = Frequency of the event to be examined ( $p=0.5$ )

$q$  = Frequency of absence of the event to be examined ( $q=1-p=0.5$ )

$z$  = Theoretical value (1.96) found in the t table at a certain degree of freedom and detected error level

$d$  = It is represented as the desired  $\pm$  deviation according to the incidence of the event (sensitivity=0.10).

$n = (N \cdot z^2 \cdot p \cdot q) / (N \cdot d^2 + z^2 \cdot p \cdot q)$

$n = (27,334 \cdot (1.96)^2 \cdot (0.5) \cdot (0.5)) / (27334 \cdot (0.10)^2 + (1.96)^2 \cdot (0.5) \cdot (0.5)) = 96$

## SURVEY METHODOLOGY

The questionnaire has been deployed via the web to 46,941 State of Michigan employees from March 2, 2020 to March 23, 2020. And 27.334 has been respondent.

- Survey items are on a 5-point scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree) - Agree score is the percentage of responses that are a 4 or 5 (Agree or Strongly Agree). The higher the reported Agree score, the more favourable the result. - 63 core items have been included along with one positive work elements question, one barrier to productivity question, and 9 open-ended questions.
- All survey responses are anonymous and a minimum of 10 respondents required for each group to be reported separately. Survey questionnaire included standard demographic questions and questions measuring Employee Engagement, Organizational Commitment and BSC.

## HYPOTHESES OF THE RESEARCH

To achieve the purpose of this study, the following research questions and hypotheses will be investigated.

### Research Question 1-What is the relationship between Job Satisfaction, Organizational Commitment, Employee Engagement, Positive Management and BSC?

H1: There is a significant relationship between Job satisfaction, Organizational Commitment, Employee Engagement and BSC.

### Research Question 2-What is the relationship between demographic characteristics of the sample Job Satisfaction, Organizational Commitment, Employee Engagement, and BSC?

H2a: Gender variable makes a difference on Job Satisfaction, Organizational Commitment, Engagement, and BSC.

H2b: Age variable makes a difference on Job Satisfaction, Organizational Commitment, Engagement, and BSC.

H2c: The Education makes a difference on Job Satisfaction, Organizational Commitment, Engagement, and BSC.

H2d: The Position at work makes a difference on Job Satisfaction, Organizational Commitment, Engagement, BSC.

H2e: The Tenure variable makes a Job Satisfaction, Organizational Commitment, Engagement, and BSC.

### Research Question 3-What is the impact of BSC on Employee Well-being (Job Satisfaction, Organizational Commitment, Employee Engagement).

H3a: There is a significant impact of BSC on job satisfaction.

H3b: There is a significant impact of BSC on Employee Engagement.

H3c: There is a significant impact of BSC on Organizational Commitment

## ANALYSIS

In data analysis, job satisfaction survey, organizational commitment survey, positive leader survey and BSC survey were examined. Data analysis was done with SPSS 28.0 statistical program. The correlation coefficient was calculated to determine the severity and direction of the relationship between the scores obtained from the scales. Whether the scale scores differed according to demographic characteristics was tested with the following parametric and non-parametric tests.

- t test, (Comparison of two-group variables)
- Kruskal-Wallis H test (comparison of variables with 3 or more groups)
- Parametric tests were used for normality assumptions and non-parametric tests were used for non-normality assumptions.
- Cronbach's Alpha coefficient was calculated for the reliability of the scales. In the study, the coefficient of significance  $\alpha$  was taken as 0.05 (95% confidence level).
- Monetary (financial) analysis has been done through the financial data between 2000 to 2020 of State of Michigan. Multicollinearity in Regression Analysis has been used to measure financial performance of organization.

## FINDINGS

The distribution of the employees participating in the research is 54% female, 43% male and 3% other. Accordingly, the number of female employees participating in the research is in the majority.

Table 1: Distribution by Gender

Gender	Respondents	f (Sample)	Percent %
Female	14,760	54	54%
Male	11,754	43	43%
Other	820	3	3%
Total	27,334	100	100%

Table 2: Distribution by Age

Age	Respondents	f(Sample)	%
55 and over	5,535	20	20%
45-54	7,941	28	28%
35-44	7,380	26	26%
25-34	5,603	23	23%
Under 25	875	3	3%
Total	27,334	100	100%

Age distribution of the employees participating in the research: 24% are under 35 years old, 27% are between 35-44 years old, 29% are between 45-54 years old and 20% are over 55 years old. According to this, the majority of the participants in the study are 35 years and older.

Table 3: Distribution by Education

Education	Respondents	f(Sample)	%
High School	4,920	18	18%
Associate`s Degree	4,373	16	16%
Bachelor`s Degree	12,574	46	46%
Master`s Degree	4,811	17	18%
Ph.D. Degree	656	3	2%
Total	27,334	100	100%

Table 4: Distribution by Employment /position

Employment -Position	Respondents	f(Sample)	%
Executives	1,203	4	4%
Manager & Supervisor	4,100	15	15%
Other	22,031	81	81%
Total	27,334	100	100%

Education distribution of the employees participating in the research: 18% are high school graduates, 16% are associate degrees and 66% are university graduates. Accordingly, university graduates are in the majority among the respondents. The positions at work of the employees participating in the research are 19.4% are managers/supervisors/leaders and 80.60% are non-management employees. According to this, non-managerial employees are in the majority among the participants in the research.

Table 5: Distribution by Tenure

Tenure	Respondents	f(Sample)	%
0-3 Years	5,193	19	19%
3-10 years	8,474	31	31%
10-20 years	6,834	25	25%
10-30 years	5,193	19	19%
30 years/more	1,640	6	6%
Total	27,334	100	100%

50% of the employees participating in the research have been working for 1-10 years and the other 50% for more than 10 years.

Table 6: Descriptive Statistics of Scale Scores

	N	Mean	%	Std. Deviation	Cronbach's Alpha
Job Satisfaction	100	3.8584	69.42	8.617	0.882
Employee Engagement	100	3.7108	62.04	12.334	0.851
Organizational Commitment	199	4.0933	78.67	7.885	0.922
Balanced Scorecard	100	3.7986	66.55	9.259	0.856

- The average Job Satisfaction Score is  $69.42 \pm 8.62$ . Cronbach's Alpha score is 0.882. Accordingly, the reliability of the Job Satisfaction Scale is high.
- The average Employee Engagement score is  $62.04 \pm 12.33$ . Cronbach's Alpha score is 0.851. Accordingly, the reliability of the Employee Engagement Scale is high.
- The average Organizational Commitment score is  $78.67 \pm 7.88$ . Cronbach's Alpha score is 0.922. Accordingly, the reliability of the Organizational Commitment Scale is high.
- The average Positive Management score is  $63.75 \pm 10.20$ . Cronbach's Alpha score is 0.867. Accordingly, the reliability of the Positive Management Scale is high.

- The average Balanced Scorecard score is  $66.55 \pm 9.26$ . Cronbach's Alpha score is 0,856. Accordingly, the reliability of the Balanced Scorecard Scale is high.

## HYPHOTESSES TESTING

**Research Question 1-What is the relationship between Job satisfaction, Organizational Commitment, Employee Engagement, BSC?** H1a: There is a significant relationship between Job satisfaction, Organizational Commitment, Employee Engagement, and BSC.

Table 7: Correlation of Dimensions

		Job Satisfaction	Balanced Scorecard	Organizational Commitment	Employee Engagement
Job Satisfaction	Pearson Correlation		.827**	.368**	.742**
	Sig. (2-tailed)		<.001	<.001	<.001
	N		100	100	100
Balanced Scorecard	Pearson Correlation	.827**		.462**	.843**
	Sig. (2-tailed)	<.001		<.001	<.001
	N	100		100	100
Organizational Commitment	Pearson Correlation	.368**	.462**		.506**
	Sig. (2-tailed)	<.001	<.001		<.001
	N	100	100		100
Employee Engagement	Pearson Correlation	.742**	.843**	.506**	
	Sig. (2-tailed)	<.001	<.001	<.001	
	N	100	100	100	

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

According to the results of the correlation analysis investigating the relationship between job satisfaction and organizational commitment, Employee Engagement, Balanced Scorecard;

- The correlation between **Job Satisfaction**, Positive Management (0.587,  $p < .001$ ), BSC ( $r = 0.827$ ,  $p < .001$ ), Employee Engagement ( $r = 0.742$ ,  $p < .001$ ) is statistically significant and highly positive. The relationship between job satisfaction and organizational commitment is moderately positive. [ $r = 0.368$ ,  $p < .001$ ]
- The correlation between **Balanced Scorecard**, Job Satisfaction (0.827,  $p < .001$ ), Positive Management (0.753,  $p < .001$ ), Employee Engagement ( $r = 0.843$ ,  $p < .001$ ) is statistically significant and highly positive. The relationship between BSC and organizational commitment is moderately positive. (0.462,  $p < .001$ )
- The correlation between **Organizational Commitment**, Positive Management (0.569,  $p < .001$ ), Employee Engagement ( $r = 0.506$ ,  $p < .001$ ) is statistically significant and positive. The relationship between Organizational Commitment, BSC (0.462,  $p < .001$ ) and Job Satisfaction is moderately positive. (0.368,  $p < .001$ )
- The correlation between **Employee Engagement**, Job Satisfaction (0.742,  $p < .001$ ), Positive Management (0.788,  $p < .001$ ), Balanced Scorecard ( $r = 0.843$ ,  $p < .001$ ) is statistically significant and highly positive. The relationship between Employee Engagement and organizational commitment is positive. (0.506,  $p < .001$ )

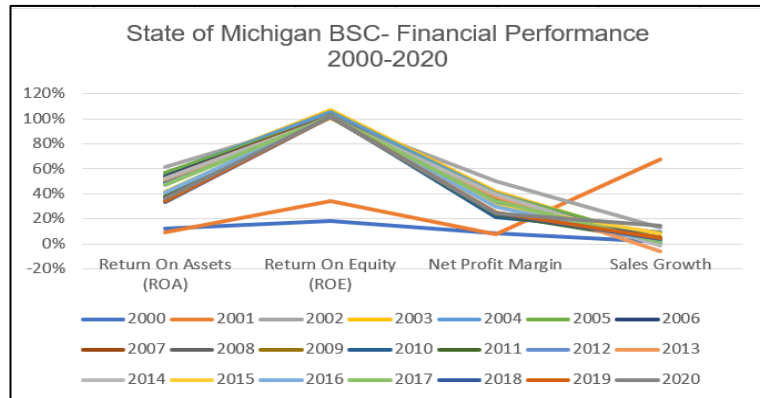
## H2b: BSC improves organizational performance.

Monetary (financial) analysis has been done through the financial data between 2000 to 2020 of State of Michigan.

Multicollinearity in Regression Analysis has been used to measure financial performance of organization.

**Table 17: State of Michigan Financial performance measurement- Financial Analysis between 2000-2020**

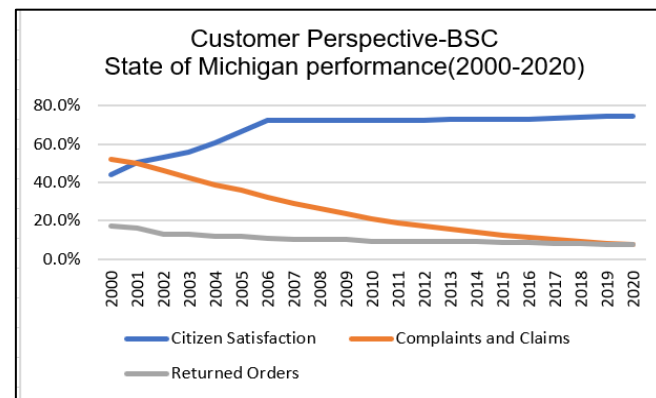
According to the results of the financial analysis based on Balanced Scorecard Financial perspective;



- ROA 2000 was 12% and increased year-over-year to 37% by 2020. ROA increased by 308% in 20 years. ROE 2000 was 19%, and increased year-over-year to 99% by 2020. ROE increased by 521% in 20 years.
- Net Profit Margin 2000 was 8%, and increased year-over-year to 24% by 2020. It increased by 300%. Revenue Margin 2000 was 2% and increased year-over-year to 15% by 2020.

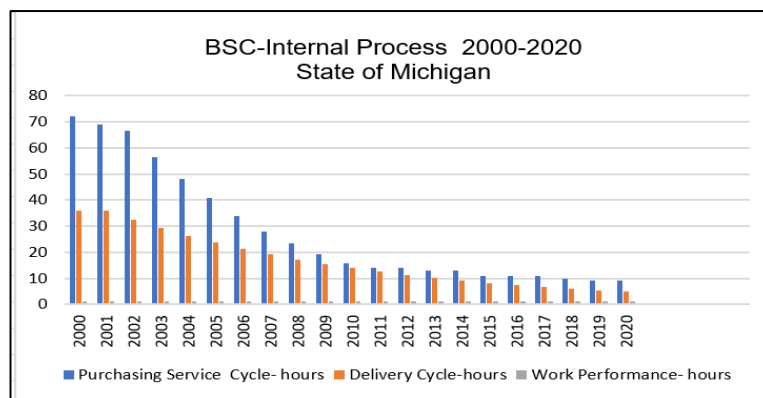
**Table 18: State of Michigan Customer Perspective 2000-2020.**

In the table 18, the results of the customer satisfaction data on Balanced Scorecard Customer perspective;



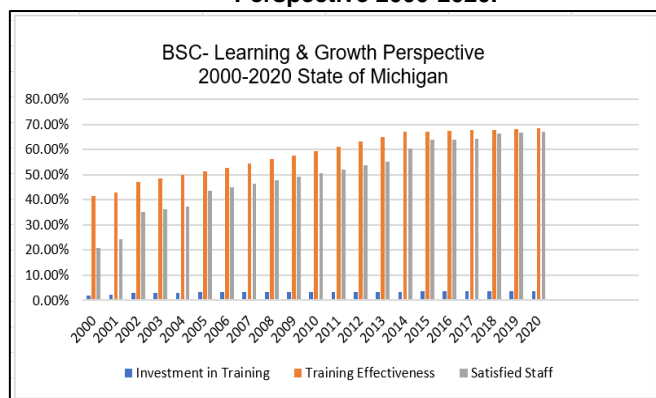
While citizen satisfaction has increased every year, complaints have decreased. Citizen satisfaction increased by 44% to 75% in 20 years. Complaints and Claims decreased by %52 to 7% and also Return orders ratio decreased by %17 to 8%.

**Table 19: Balanced Scorecard Internal Process -State of Michigan**



In the table 19, Balanced Scorecard Internal Process perspective; Delivery and work performance hours significantly decreased.

**Table 20: State of Michigan Learning &Growth Perspective 2000-2020.**



In the table 20, BSC-Learning &Growth Perspective; Training effectiveness and Satisfied employee ratio has increased significantly.



### Multicollinearity in Regression Analysis 2000-2020.

According to the results of the multicollinearity regression analysis: changing in ROS, SALES, SATIFCATION, ROE, ROA, INVESTMENT, RETURN, TRAINING, DELIVERY, PURCHASING and COMPLAINTS has been stated as following tables.

Table 21 showed that in the Model Sig(p) for all dimension is higher  $p < .001$  and there are significant correlations between dimensions.

Table 21: Multicollinearity Regression Analysis for 2000-2020 Data of SoM (State of Michigan)

Model Summary <sup>b</sup>						
Model	R	R square	R square Adj	Standard error of the estimate	Change statistics	
					Change in R squared	Change in F
1	1,000 <sup>a</sup>	1,000	,999	,31593	1,000	1,856,449

Model Summary <sup>b</sup>			
Model	Change statistics		
	gl1	gl2	Sig. Cambio en F
1	12	8	,000

a. Predictors: (Constant), SATISFIED, ROS, SALES, SATISFACTION, ROE, ROA, INVESTMENT, RETURN, TRAINING, DELIVERY, PURCHASING, COMPLAINTS  
b. Variable dependent: NETINCOME

Coefficients <sup>a</sup>					
Modelo		Non-standardized coefficients		Standardized coefficients	Sig.
		B	Desv. Error	Beta	
1	(Constante)	3,228	17,644		,183
	ROA	,006	,026	,008	,238
	ROE	,024	,019	,051	1,244
	ROS	,974	,035	,983	27,555
	SALES	,003	,012	,004	,254
	SATISFACTION	-,047	,093	-,041	-,503
	COMPLAINTS	,109	,155	,152	,702
	RETURN	,179	,273	,044	,655
	PURCHASING	-,038	,065	-,079	-,584
	DELIVERY	-,092	,129	-,087	-,712
	INVESTMENT	-1,805	1,457	-,070	-1,239
	TRAINING	-,062	,170	-,052	-,364
	SATISFIED	,119	,077	,154	1,540

Coefficients <sup>a</sup>					
Model		95,0% confidence interval for B		Correlations	
		Lower limit	Upper limit	Zero order	Partial
1	(Constante)	-37,459	43,915		
	ROA	-,053	,066	,950	,084
	ROE	-,020	,067	,712	,403
	ROS	,893	1,056	1,000	,995
	SALES	-,025	,031	-,489	,090
	SATISFACTION	-,262	,168	,180	-,175
	COMPLAINTS	-,249	,468	-,022	,241
	RETURN	-,451	,810	-,226	,226
	PURCHASING	-,189	,113	-,043	-,202
	DELIVERY	-,388	,205	-,080	-,244
	INVESTMENT	-5,165	1,554	,435	-,401
	TRAINING	-,453	,329	,058	-,128
	SATISFIED	-,059	,297	,125	,478

## Research Question 2-What is the relationship between demographic characteristics of the sample Job Satisfaction, Organizational Commitment, Employee Engagement, and BSC?

H2a: Gender variable makes a difference on Job Satisfaction, Organizational Commitment Engagement, and BSC.

Table 8: Comparison of Gender Groups in Terms of Dimensions

Gender		N	Mean	Std. Deviation	F	p
Job Satisfaction	Female	54	<b>3.8031</b>	0.4764	0.99486	0.322
	Male	43	<b>3.8947</b>	0.41569	1.01043	0.315
Employee Engagement	Female	54	3.6607	0.47759	0.79946	0.42602
	Male	43	3.7414	0.51309	0.79293	0.42997
Organizational Commitment	Female	54	<b>4.071</b>	0.40386	0.39459	0.69403
	Male	43	<b>4.1085</b>	0.53314	0.38253	0.70313
Balanced Scorecard	Female	54	3.7323	0.43074	1.36883	0.17428
	Male	43	3.8488	0.39772	1.38137	0.17048

Independent Samples Test									
Gender ( Female, Male and Other)		Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference
						One-Sided p	Two-Sided p		
Job Satisfaction	Equal variances assumed	0.262	<b>0.610</b>	-0.995	95	0.161	<b>0.322</b>	-0.09162	0.09209
	Equal variances not assumed			-1.010	94.168	0.157	<b>0.315</b>	-0.09162	0.09067
Employee Engagement	Equal variances assumed	0.467	<b>0.496</b>	-0.799	95	0.213	<b>0.426</b>	-0.08065	0.10089
	Equal variances not assumed			-0.793	87.093	0.215	<b>0.430</b>	-0.08065	0.10172
Organizational Commitment	Equal variances assumed	6.043	<b>0.016</b>	-0.395	95	0.347	<b>0.694</b>	-0.03754	0.09514
	Equal variances not assumed			-0.383	76.495	0.352	<b>0.703</b>	-0.03754	0.09814
Balanced Scorecard	Equal variances assumed	0.248	<b>0.619</b>	-1.369	95	0.087	<b>0.174</b>	-0.11651	0.08512
	Equal variances not assumed			-1.381	92.884	0.085	<b>0.170</b>	-0.11651	0.08435

$$P > .05$$

In the research, “Does the gender variable make a difference on Job Satisfaction, Employee Engagement, Commitment, and BSC?” The results of the **t test**, which was conducted to find an answer to the sub-problem expressed in the form of a sub-problem, are given in Table 8. In the table 8, it is seen that the scores of male employees and the scores of female employees are compared. As a result of the independent groups **t-test**, it was determined that there was no statistically significant difference score of male employees and scores of female employees on dimensions

- **Job satisfaction** scores of male employees (M= 3.8947) and the scores of female employees (M=3.8031).
- **Employee Engagement** scores of males (M=3.7414) and scores of female employees (M=3.6607).
- **Organizational Commitment** scores of male employees (M= 4.1085) and the scores of female employees (M=4.0710).
- **BSC** scores of male employees (M= 3.7323) and the scores of female employees (M=3.8488).

Accordingly, the gender variable does not make a significant difference on the dimensions which is “p” > 0.05 for all dimensions.

## H2b: Age variable makes a difference on Job Satisfaction, Organizational Commitment, Employee Engagement, and BSC.

In the research, “Does the age variable make a difference on Job Satisfaction, Employee Engagement, Commitment, and BSC?”

Table 9: Comparison of Age Groups in Terms of Dimensions

Test Statistics <sup>a,b</sup>				
	Job Satisfaction	Employee Engagement	Organizational Commitment	Balanced Scorecard
Kruskal-Wallis H	19.266	11.839	10.485	11.783
df	4	4	4	4
Asymp. Sig. (p)	0.167	0.186	0.330	0.190
a. Kruskal Wallis Test				
b. Grouping Variable: Age				

The results of the **Kruskal-Wallis H test**, which was conducted to find an answer to the sub-problem expressed in the form of a sub-problem, are given in Table 9. In the table 9, it is seen that the scores of ages are compared. As a result of the **Kruskal-Wallis H test**, there was no statistically significant difference between age and dimensions.

## H2c: The Education variable makes a difference on Job Satisfaction, Organizational Commitment, Employee Engagement, and BSC.

Table 10: Comparison of Education Groups in Terms of Dimensions

Test Statistics <sup>a</sup>				
	Job Satisfaction	Employee Engagement	Organizational Commitment	Balanced Scorecard
Mann-Whitney U	383.500	553.000	800.500	576.000
Wilcoxon W	978.500	1148.000	1395.500	1171.000
Z	-5.380	-4.144	-2.359	-3.978
Asymp. Sig. (2-tailed)	0.744	0.341	0.183	0.270
a. Grouping Variable: Education				

In the research, “Does the education variable make a difference on Job Satisfaction, Employee Engagement, Commitment, BSC?” The results of the Mann-Whitney U, which was conducted to find an answer to the sub-problem expressed in the form of a sub-problem, are given in Table 10. In the table 10, it is seen that the scores of different education group are compared. As a result of the **Mann-Whitney U test**, it was determined that there was no statistically significant difference between dimensions and education.

## H2d: The Position at work variable makes a difference on Job Satisfaction, Organizational Commitment, Job Engagement, and BSC.

Table 11: Comparison of Position/ Employment Groups in Terms of Dimensions

Runs Test					
	Position	Job Satisfaction	Employee Engagement	Organizational Commitment	Balanced Scorecard
Test Value <sup>a</sup>	3	3.89	3.66	4.17	3.77
Cases < Test Value	20	46	50	41	47
Cases ≥ Test Value	80	54	50	59	53
Total Cases	100	100	100	100	100
Number of Runs	31	34	37	52	43
Z	-0.632	-3.375	-2.814	0.544	-1.578
Asymp. Sig. (2-tailed)	0.528	0.001	0.005	0.586	0.115
a. Median					

**Pairwise Comparisons of Position**

Each node shows the sample average rank of Position.

In the table 11, it is seen that the scores of position group are compared. As a result of **NPAR Run test**, it was determined that there was no statistically significant difference between commitment, and BSC based on position which is “ $p > 0.05$ ”. However, Job Satisfaction ( $p < 0.05$ ) and Employee Engagement ( $p < 0.05$ ) is affected by position.

## H2e: The Tenure variable makes a difference on Job Satisfaction, Organizational Commitment, Employee Engagement, and BSC.

In the table 12, it is seen that the scores of position group are compared. As a result of the **Jonckheere-Terpstra Test**, it was determined that there was no statistically significant difference between dimensions which is ( $p = A \text{ Sig.} > 0.05$ ).

Table 12: Comparison of Tenure Groups in Terms of Dimensions

Jonckheere-Terpstra Test <sup>a</sup>				
	Job Satisfaction	Employee Engagement	Organizational Commitment	Balanced Scorecard
Number of Levels in Tenure	3	3	3	3
N	100	100	100	100
Observed J-T Statistic	1209.000	1325.000	1315.500	1365.500
Mean J-T Statistic	1544.500	1544.500	1544.500	1544.500
Std. Deviation of J-T	153.254	153.295	152.137	153.252
Std. J-T Statistic	-2.189	-1.432	-1.505	-1.168
Asymp. Sig. (2-tailed)	0.286	0.152	0.132	0.243

Tenure	N	Mean Rank
Job Satisfaction	0-3 years	62.26
	3-10 years	51.39
	10 years and more	45.48
	Total	
Employee Engagement	0-3 years	63.45
	3-10 years	46.31
	10 years and more	48.18
	Total	
Organizational Commitment	0-3 years	64.37
	3-10 years	45.95
	10 years and more	48.05
	Total	
Balanced Scorecard	0-3 years	60.47
	3-10 years	47.13
	10 years and more	48.80
	Total	

### Research Question 3-What is the impact of BSC on Employee Well-being (Job Satisfaction, Organizational Commitment, Employee Engagement)?

The effect of BSC on the Employee Well-being was determined by linear regression model and R Square calculations.

Table 13: BSC on Employee Well-being and Positive Management

	Variables		Model Summary				Annova (Job Satisfaction)					
IMPACT OF BALANCED SCORECARD ON EMPLOYEE WELL-BEING	Variables - Predictors (Constant)	Dependent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate		Sum of Squares	df	Mean Square	F	Sig. (p)
	Balanced Scorecard	Job Satisfaction	0.827	0.683	0.680	0.25660	Regression	13.911	1	13.911	211.279	(p<.001)
							Residual	6.453	98	0.066		
							Total	20.364	99			
	Balanced Scorecard	Employee Engagement	0.843	0.710	0.708	0.26680	Regression	17.120	1	17.120	240.505	(p<.001)
							Residual	6.976	98	0.071		
							Total	24.096	99			
	Balanced Scorecard	Organizational Commitment	0.462	0.213	0.205	0.41728	Regression	4.620	1	4.620	26.534	(p<.001)
							Residual	17.064	98	0.174		
							Total	21.684	99			

In the table 12, it is seen that the effect of BSC on well-being and positive management are stated by R Square value. As a result of the linear regression model:

- BSC has a positive effect of 68.30% (R Squared=0.683) on Job satisfaction.
- BSC has a positive effect of 71.00% (R Squared=0.710) on Employee Engagement.
- BSC has a positive effect of 21.30% (R Squared=0.213) on Organizational Commitment.

Table 14: BSC on Employee Well-being Hypotheses

Hypotheses	p (sig)	r	Result	Explanation	
H1: There is a significant relationship between	Job satisfaction	$p<0.05$	0.631	Supported	There is a statistically significant relationship between job satisfaction, BSC , Engagement and Organizational commitment.
	Organizational Commitment	$p<0.05$	0.384		
	Employee Engagement	$p<0.05$	0.719		
	Balanced Score card	$p<0.05$	0.721		
H2a: Gender variable makes a difference on	Job satisfaction	$p<0.05$	0.322	Supported	Gender variable does not make a significant difference on dimensions.
	Organizational Commitment	$p<0.05$	0.426		
	Employee Engagement	$p<0.05$	0.694		
	Balanced Score card	$p<0.05$	0.172		
H2b: Age variable makes a difference on	Job satisfaction	$p<0.05$	0.167	Supported	Age variable does not make a significant difference on dimensions.
	Organizational Commitment	$p<0.05$	0.330		
	Employee Engagement	$p<0.05$	0.186		
	Balanced Score card	$p<0.05$	0.190		
H2c: The Education variable makes a difference on	Job satisfaction	$p<0.05$	0.744	Supported	Education variable does not make a significant difference on dimensions.
	Organizational Commitment	$p<0.05$	0.341		
	Employee Engagement	$p<0.05$	0.183		
	Balanced Score card	$p<0.05$	0.270		
H2d: The Position at work variable makes a difference	Job satisfaction	$p<0.05$	0.001	Not Supported	Manager Position variable makes a significant difference on Job Satisfaction and Employee Engagement
	Employee Engagement	$p<0.05$	0.005	Not Supported	
	Organizational Commitment	$p<0.05$	0.586	Supported	Non-Manager Position variable does not make a significant difference on Organizational Commitment, and BSC
	Balanced Score card	$p<0.05$	0.115	Supported	
H2e: The Tenure variable makes a difference on	Job satisfaction	$p<0.05$	0.286	Supported	Tenure variable does not make a significant difference on dimensions.
	Organizational Commitment	$p<0.05$	0.13		
	Employee Engagement	$p<0.05$	0.15		
	Balanced Score card	$p<0.05$	0.243		
H3: There is a significant impact of BSC on	a)Job satisfaction	$p<0.01$	0.683	Supported	BSC has a positive effect of 68% on Job satisfaction. BSC has a positive effect of 71% on Employee Engagement. BSC has a positive effect of 21% on Organizational Commitment.
	b)Organizational Commitment	$p<0.01$	0.213		
	c)Employee Engagement	$p<0.01$	0.710		

### Impact of BSC from 2000 to 2020.

They survey result has been gathered from SoM website. Study used both the cross-sectional data for 2020 and the panel data for 2000-2020 to assess the impact of BSC the level of employee satisfaction.

Table 15: Statistic Mean of Dimensions

Statistics					
		Job Satisfaction	Organizational Commitment	Employee Engagement	Balanced Scorecard
N	Valid	9	9	9	9
	Missing	0	0	0	0
Mean		67.67	73.33	61.78	63.33
Median		68	73	62	64
Std. Deviation		1.323	3.279	0.833	2.398
Range		4	10	3	8
Minimum		65	69	60	59

Table 16: Correlations between dimension from 2000-2020

Correlations 2000 -2020				
Control Variables		Job Satisfaction	Organizational Commitment	Employee Engagement
Job Satisfaction	Correlation	1.000	-0.098	0.674
	Significance (2-tailed)		<b>0.817</b>	<b>0.067</b>
	df	0	6	6
Organizational Commitment	Correlation	-0.098	1.000	-0.380
	Significance (2-tailed)	<b>0.817</b>		<b>0.353</b>
	df	6	0	6
Employee Engagement	Correlation	0.674	-0.380	1.000
	Significance (2-tailed)	<b>0.067</b>	<b>0.353</b>	
	df	6	6	0

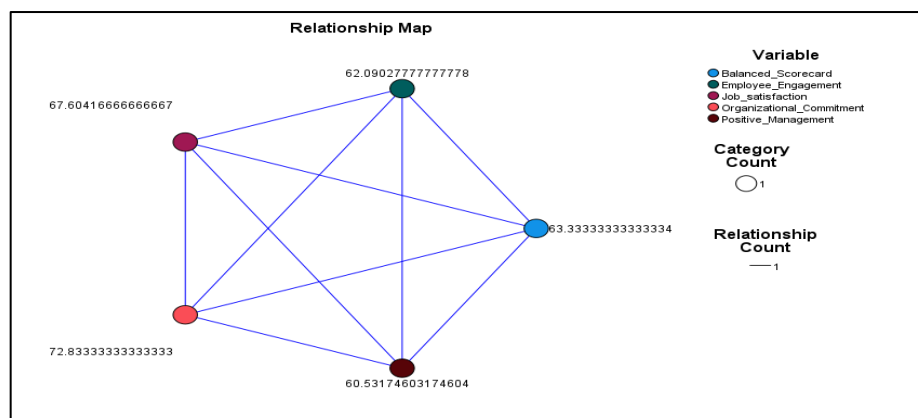


Table 16 shows there are significant and positive correlation between Job Satisfaction, Organizational Commitment and Job Engagement and BSC. The following OLAP Cubes- Relationship map show that BSC has 63% impact on employee well-being and positive management.

## CONCLUSION AND RECOMMENDATIONS

To reap the full benefits of the scorecard approach, organizations must work harder to engage employees at all levels in the BSC strategy. The study explored the impact of the balanced scorecard on employee well-being. The results show that BSC makes significant contributions to employee well-being as well as significantly improving company performance. The results revealed a significant positive relationship between the balanced scorecard and employee well-being.

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