

*Full Length Research Paper*

# **Blue ocean strategies as panacea to sustainable performance of tea firms in Kenya**

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Received 10 November, 2020; Accepted 27 January, 2021

**Although tea is the leading cash crop in Kenya, the industry faces significant challenges. Although application of blue ocean strategy (BOS) could redress some of its problems, few studies have explored the question. This study investigated the relationship between BOS and sustainable performance of the Kenyan tea industry. The study applied the Four Action Framework (FAF) together with elements of Six Searching Paths-Frameworks (SSPF). The strategies resulting from SSPF were fashioned into the FAF, and validated by employees of tea estates in Nandi County. The sample consisted of 240 workers, selected from a target population of 1150, by stratified random sampling. The study found that all predictors in the regression model, eliminate ( $\beta=0.291$ ), reduce ( $\beta=0.314$ ), raise ( $\beta= 0.435$ ), and create factors ( $\beta=0.344$ ) had a significant and positive effect on sustainable performance. Thus, implementation of the four factors could lead to sustainable performance of Kenya's tea industry. The study concluded that branding tea, adding value to it, increasing domestic consumption, productivity and eliminating long and inefficient supply chain would lead to sustainable performance. The study recommends that the tea industry should add value and brand its tea.**

**Key words:** Tea, blue ocean strategy (BOS), red ocean strategy (ROS), sustainable performance.

## **INTRODUCTION**

Sustainable performance remains an overriding objective of many businesses. Sustainability is the incorporation of economic, environmental, and social value in a firm's business (Schoenmaker and Schramade, 2019). Because of its multidimensional nature, performance has defied a universal definition (Richard et al., 2009). According to Ahmed and Shaffiq (2014), organizational performance is associated with success and endurance of firm. They

define it as the actual results/outcomes of an organization as measured against its targets. Organizational performance has been described as an organization's ability to acquire and utilize its scarce resources and valuables as expeditiously as possible in the pursuit of its strategic planning (Griffins, 2006; Richard et al., 2009). Coupling sustainability to performance, sustainable performance can thus be conceptualized as achieving

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successful outcomes that encapsulate economic, environmental and social aspects. Fechet and Nedelcu (2019) visualize sustainable performance as one concerned with simultaneous achievement of three categories of objectives: economic-financial, social and environmental. Sustainable performance therefore aims to create value for all stakeholders of a firm, namely, shareholders, employees, suppliers, customers, creditors and the local community. Businesses are forever competing, each striving to gain a competitive advantage over its rivals. Competitive advantage has been defined as the above industry average manifested exploitation of market opportunities and neutralization of competitive threats (Sigalas et al., 2013). The antecedents of competitive advantage have been cited as mobility barriers (factors that hinder the ability of firms to enter or exit industries), market positions and idiosyncratic firm resources (valuable, rare, inimitable and unsubstitutable financial, physical, human, relational resources) (Sigalas, 2015).

Traditionally, firms compete with the aim of capturing the largest market share, by focusing on differentiation, cost leadership, or focus (Porter, 1985; Thompson et al., 2008). Chan and Mauborgne (2004) upended this logic, arguing that companies could achieve sustainable performance by creating uncontested market spaces that render competition irrelevant. In a seminal book titled, 'Blue Ocean Strategy', Kim and Mauborgne (2005a) analyzed 150 companies within 30 industries over 100 years and concluded that there existed two types of markets, which they metaphorically termed, 'blue and red oceans'. Red oceans include all the extant industries, that is, the known market space, where industry boundaries are clear-cut and accepted, and the tenets of competition are known. They are characterized by fierce competition, shrinking market size, decreasing profits and growth, commodified products and cannibalized firms. This causes the ocean to turn 'bloody' and hence 'red oceans.' In contrast, blue oceans – referring to the vast and unexplored waters in an ocean – represent undiscovered and untapped market space, characterized by demand creation, highly profitable growth and no competition. Table 1 summarizes key differences between red ocean strategy (ROS) and blue ocean strategy (BOS).

## BLUE OCEAN STRATEGY FRAMEWORK

The core BOS tools are the strategic canvas, consisting of a value curve, Six Searching Paths Framework (SSPF), Four Actions Framework (FAF) and Sequence of BOS (Kim and Mauborgne, 2005a). The first step is to conduct a business analysis, whose function is two-fold. First, it identifies factors which are taken for granted

during competition, yielding a strategic canvas with an old value curve. A strategic canvas is a two-dimensional diagram, showing the range of factors that an industry competes on, on the horizontal axis, and the offering level that buyers receive for the named factors on the vertical axis. Joining the offering levels of all the factors using a line produces a value curve, a visual display of an organisation performance (Kim and Mauborgne, 2004).

Second, business analysis allows the identification of the most suitable searching path or their combination. To radically improve the old strategic canvas, the firm applies the FAF together with one or more SSPF. The SSPF is a detailed set of six methods that can be used to identify viable Blue Ocean ideas from a random mix of possibilities. The six searching paths are: 'look across alternative industries', 'look across strategic groups within industries', 'look across the chain of buyers', 'look across complimentary products and services', 'look across functional or emotional appeal to buyers', and 'look across time' (Kim and Mauborgne, 2004, 2005a, c). At least one of the six searching paths must apply in order to create a BOS. In the event that none of six paths are applicable, a BOS cannot be fashioned.

The Four Actions Framework (FAF) consisting of raise (factors a firm should increase well above the industry's norm), eliminate (those it should totally remove), reduce (those that must be decreased below the industry's), and create (innovations) is then applied to help derive an uncontested market space or value innovation (Kim and Mauborgne, 2004). The central plank of BOS is 'value innovation' – the simultaneous pursuit of differentiation and low cost - a notion anathema to the hitherto conventional logic of value-cost trade-off, in which a firm can either create higher value for customers at a higher cost or create reasonable value at a lower cost. The objective of value innovation is not to compete but to make competition irrelevant (Kim and Mauborgne, 2005a). In summary, the objective driving FAF is to increase the buyer's revenue and generate new demand (Leavy, 2005).

Tea, *Camellia sinensis*, is the leading cash crop in Kenya, with the country currently the world's third largest producer after China and India (Voora et al., 2019). Since 2009, the crop has been the country's highest foreign exchange earner, accounting for about 5 per cent of GDP (KIPPRA/ACBF, 2017) and supporting, directly and indirectly, over 10 million farm families in the country (FAO, 2015). Production of tea in Kenya occurs by a dual system, made of large and small-scale farmers. Whereas the former cultivate huge estates, they produce only about 40% of the tea, with the rest produced by about 600 000 smallholders, affiliated to KTDA (Kenya Tea Development Authority, 2017). The smallholder tea subsector has grown tremendously since its inception in 1962, with annual production rising from 0.6 million kg in

**Table 1.** Differences between ROS and BOS.

Dimension of strategy	ROS	BOS
Industry assumption	Conditions in industry are set	Conditions in industry can be shaped
Strategic focus	A firm must beat competition	A firm should make competition irrelevant
Market space	Compete in existing market space	Create uncontested market space
Strategic choice	A firm should pursue either differentiation or low cost	A firm should pursue both differentiation and low cost
Demand	A firm exploits existing demand	A firm creates and captures new demand

Source: Adapted from Kim and Mauborgne (2004; 2005a, b, c).

1962 to 218 million kg in 2012 whereas acreage under the crop has expanded from 4,471 to 120, 000 ha, over the same period (Mwaura et al., 2005).

### Problem statement

Despite its preeminence in the economy, the Kenyan tea sector faces significant challenges. Kenyans consume only 5% of the tea they produce, exporting the rest, compared to a worldwide local consumption of about 60% (Ateka et al., 2018; van der Wal, 2008). Although Kenya's share of the world market increased from 6% in the 1970s to 26% in 2014, domestic consumption has stagnated at 5%. Secondly, Kenya's tea exports are heavily dependent upon five major export markets, namely, Egypt, Pakistan, United Kingdom, Sudan and Afghanistan (Wanjiru et al., 2015), some of which are unstable. Thus, any perturbation in any of these markets affects farmers' tea incomes.

Thirdly, having peaked in 2014, the current world market price for tea has stagnated and remained low, depressing farmers' incomes (Bolton, 2017). Kenya tea productivity in the smallholder subsector increased steadily in the 1960s to the 1980s. However, in the 1990s and 2000s, production stagnated and declined, with lower yield per hectare compared with plantation tea subsectors (Kamau, 2008).

Application of BOS by the Kenyan tea sector could redress some of its problems. By creating value innovation, sufficiently new products at lowered costs could be created. However, few studies have explored BOS with respect to the Kenyan tea sector.

### General objective

The general objective of this study was to investigate the relationship between BOS and sustainable performance of the Kenyan tea industry.

### Specific objectives

The specific objectives of this study were:

- (i) To determine the effect of Eliminate factors on sustainable performance of the Kenyan tea industry
- (ii) To establish the effect of Reduce factors on sustainable performance of the Kenyan tea industry
- (iii) To determine the effect of Raise factors on sustainable performance of the Kenyan tea industry
- (iv) To find out the effect of Create factors on sustainable performance of the Kenyan tea industry

### Study hypotheses

The study tested the following null hypotheses for the specific objectives:

$H_{o1}$ : Eliminate factors have no effect on sustainable performance of the Kenyan tea industry.

$H_{o1}$ : Reduce factors do not affect sustainable performance of the Kenyan tea industry

$H_{o1}$ : Raise factors have no effect on sustainable performance of the Kenyan tea industry

$H_{o1}$ : Create factors do not affect sustainable performance of the Kenyan tea industry

### EMPIRICAL REVIEW

Bataineh and Alomyan (2017) investigated the effect of blue ocean strategy in increasing competitive advantage in commercial banks of Irbid District, Jordan. Questionnaires were randomly distributed to 135 employees from three management levels within the banks. Results were analyzed using descriptive statistics and simple regression coefficient analysis. Findings indicated strong, significant and positive influence between (create new value, reducing cost, and raising facilitating actions) and competitive advantage. Mwende (2016) studied the effect of blue sea systems on

competitive advantage of microfinance institutions in Kenya. The study collected data from 52 institutions using questionnaires and analyzed using descriptive statistics and multiple linear regression. The study found that the key elements of BOS that are germane in explaining competitive advantage were: consumer loyalty, item separation, differentiation strategies, innovative delivery channels, and seeking customer feedback and promptly addressing them.

In Rawabdeh (2012)'s study, the BOS was applied to an industrial Jordanian firm owned by the private sector. The main results of this study indicate that the company was able to identify a number of new products that could lead to the development of new markets, particularly Blue Ocean markets. Moreover, Becker (2013) found that the IKEA Company in Nanjing, China, has applied the BOS successfully and that it is supported by the value of good innovation for both consumers and the company. It is a good example of the successful implementation of a global BOS.

Dehkordi et al. (2012) tried to shed light on the obstacles and constraints facing the application of BOS like simulation and imitation. The study compared the competitive environment (Red Ocean Strategy) to the BOS, and looked at the importance of the role of management in the use of BOS to increase revenues. It also showed the importance of innovation and its value in the application of this strategy, and in helping organizations to stay in the competitive market. It demonstrated the concept of the first and the second imitator as a crucial issue when considering this strategy and its mechanism of action in the market.

Kiptoon (2014) investigated the impact of BOS on the performance of Bamburi Cement Limited, a leading manufacturer of cement in East African region. Data were collected by interviewing the company's top management about its performance over a 15-year period. Findings showed that aggressive implementation of new value innovations significantly improved the organization's strategic position. However, the study found that BOS was insufficient in explaining growth in a rapidly evolving competitive environment. The study concluded that combining BOS with the ROS was pertinent in overcoming excessive competitive pressures.

## MATERIALS AND METHODS

To apply the BOS, a strategy canvas was first created, in which the Kenyan tea industry performance was compared with two other prominent tea growers, Sri Lanka and Pakistan (Chen, 2020). This yielded a value curve. A strategic canvas is a two-dimensional diagram, showing the range of factors that an industry competes on, on the horizontal axis, and the offering level that buyers receive for the named factors on the vertical axis. Joining the offering levels of all the factors using a line produces a value curve, a visual display

of an organisation performance (Kim and Mauborgne, 2004). Following literature review, this study determined five factors that could affect the competitiveness of the Kenyan tea industry, and therefore, its performance. These were domestic tea consumption (DTEACON), productivity/yield per hectare (PROD), export price of tea (EXPRC), branding (BRANDING) and tea farmer returns (FAMRETURNS).

The values representing the current assessment of the level of factors were plotted on the Y-axis. The ratings were quantified on a 0-to-5- point scale, representing absence, relatively low, low, medium, high, and relatively high, respectively. The source of the data was various websites and published reports about the Kenyan, Sri Lanka and Indian tea industries. In 2018, Kenyans consumed only 5% of the tea they produce (Chen, 2020). On the other hand, domestic consumption of tea in India and Sri Lanka is 81 and 11%, respectively (Tea Exporters Association, 2020). Consequently, the DTEACON scale, Kenya, India and Sri Lanka were rated as 0.25 (5/100\*5), 4.05 and 0.55, respectively. Since, percentage tea exports were merely the converse of domestic consumption, they were not included in the analysis. Because of the predominance of smallholder farmers in Kenyan tea production, productivity in the three countries was compared using smallholder yield per hectare. In 2017, productivity in Kenya, India, and Sri Lanka was 2086.4, 2250 and 2123 kg/ha, respectively. Out of a possible maximal hectare production of 4500 kg/ha (Premaratne et al., 2018), the respective ratings of the three countries were 2.31 (2086.4/4500\*5), 2.5, and 2.4, for Kenya, India and Sri Lanka, respectively, for PROD. In 2018, Sri Lankan tea fetched the highest export price (EXPRC) on the international market at 4.50 US\$/Kg, followed by Indian (3.00 US\$/Kg) and Kenyan (2.50 US\$/Kg) teas (Intergovernmental Group on Tea (2018; Bolton, 2016). Sri Lankan tea was thus scored the highest (4.5/4.5\*5 =5), followed by India (3.33) and Kenya (2.78).

Kenya brands (BRANDING) only 14% of its tea, exporting the rest in bulk form. On the other hand, Sri Lanka and India brand 57 and 60% of the tea they produce (Statista, 2019; KIPPRA/ACBF, 2017). Thus, on the scale, Kenya was rated 0.7 (14/100\*5), while Sri Lanka and India were graded 2.85 and 3.0, respectively. Sri Lanka and India intervene to ensure that smallholders earn decent returns from tea by regulating the system of payments by private factories unlike Kenya. Sri Lanka implements a 68:32 revenue sharing ratio between smallholder and factory, with "tea inspectors" closely monitoring the price factories pay to farmers and what they receive from tea actions. India applies a 60:40 farmer to factory revenue sharing formula when the mean price for all types of tea reported by a factory in a specific month is either less than or equal to the monthly combined mean auction price for all types of tea in a region. When the price realized by the factory is more than the monthly average auction price, the differential is shared equally between the farmer and the factory. In Kenya, the returns to small-scale farmers remain low because of high management fees charged by KTD, long and inefficient supply chain, mismanagement, numerous taxes imposed on farmers and the high cost of production (Ng'ang'a, 2015). Because of systems that ensure high farmer returns (FAMRETURNS), both Sri Lanka and India are rated 5 while Kenya is rated 1 because of their absence.

This study then applied the FAF together with elements of Six Searching Paths-Frameworks (SSPF), in order to improve the current strategic canvas for the Kenyan tea industry to make it more competitive. The elements of SSPF that were analyzed included looking across alternative industries, looking across the chain of buyers and looking across functional or emotional appeal to potentially create a Kenyan tea blue ocean (Kim and Mauborgne, 2004). The strategies resulting from SSPF were fashioned into the FAF, and put to employees of tea estates in Nandi County, a

bedrock of tea farming in Kenya, to seek their opinions.

Nandi County, located in the North Rift, covers an area of 2,884 km<sup>2</sup> and lies between latitude 0°6'13.04" N and longitude 35°10'39.56" E. The target population of the study was 1150 employees drawn from 10 registered Tea Estates in Nandi County, namely; Nandi Tea, Chemomi, Kibwari, Savani, Kipchomo, Siret, Kapchorua, Kapsubeiwa, Kipkoimet and Kaimosi. This region was chosen because it is one of the largest tea producing areas in the country (KTDA (2017). The study collected data from 240 respondents, according to the formula and correction for sampling from small population outlined in Noordzij et al. (2010). Stratified random sampling was used to select the respondents. To ensure a proportionate representation of all the tea estates in the study, the sample contributed by estate was weighted according to the estate's target population. A sampling frame of all the employees was obtained from general managers of each respective estate and used to select respondents using simple random sampling, which was accomplished with the help of a table of random numbers.

Questionnaire was used to collect data. The questionnaire was divided into two sections. Section 1 consisted of the respondents' biographical characteristics of gender, age and highest education level. Section 2 consisted of items covering the predictor variables: eliminate (three items), reduce (five items), raise (eight items) factors and create (four items), and the criterion variable, sustainable performance. Each item was measured on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). To test the reliability of the tool, alpha Cronbach consistency coefficient (Alpha) was computed. Field work was conducted from 10<sup>th</sup> to 28<sup>th</sup>, November, 2019. Data were described using frequencies. To establish the relationship between blue ocean strategies and sustainable performance, an Ordinary Least Squares (OLS) linear regression method was used. The study tested the following model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \quad (1)$$

Where Y is sustainable performance,  
 $\beta_0$  is the regression constant,  
 $\beta_1, \beta_2, \beta_3,$  and  $\beta_4$  are the coefficients of independent variables to be estimated,  
 $X_1$  are eliminate factors  
 $X_2$  are reduce factors  
 $X_3$  are raise factors  
 $X_4$  are create factors  
 $\varepsilon$  is an error term.

The core assumptions of OLS are as follows.

First, linearity asserts that the dependent variable is a linear function of a set of predictor variable and the error term. Secondly, disturbances have the same variance (homoscedastic) and are not related with one another (non-autocorrelated). Lastly, there is no exact linear relationship among independents, that is, no multicollinearity (Chatterjee and Simonoff, 2012; Greene, 2008). All statistical tests were two-tailed. Significant levels were measured at 95% confidence level with significant differences recorded at  $p < 0.05$ .

## RESULTS

### Strategy canvas

Figure 1 presents the value curve for the Kenyan tea

industry relative to those of Sri Lanka and India. The value curve shows that Kenya's tea industry performs the worst compared to India and Sri Lanka, in all the five competition factors investigated. Domestic tea consumption in Kenya is almost insignificant, suggesting that the country has a vast, untapped market. Although tea productivity of Kenya was roughly comparable to that of the other two countries in the study, it is less than a half of the possible maximal production, indicating that yields could be increased. Sri Lankan tea fetches almost twice in export price compared to Kenyan tea, showing deficiencies in the Kenyan tea model. Sri Lanka and India brand their tea about three times more than what Kenya does. Farm returns from tea in Kenya is quite low compared with India and Sri Lanka.

### Sample characteristics of tea estate employees

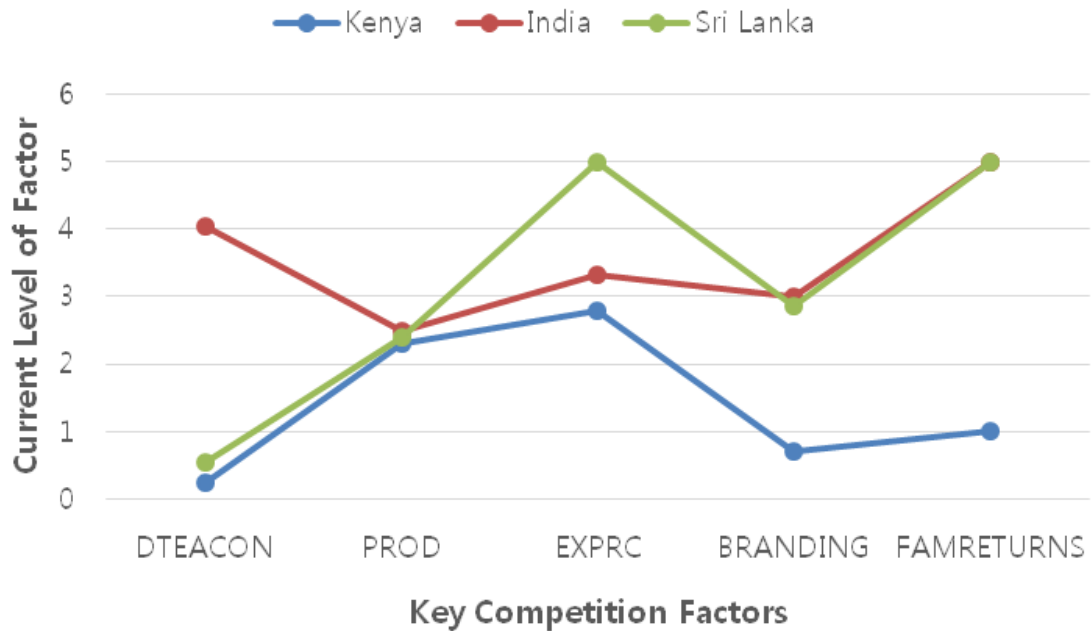
The sample population was male dominated (with more than three quarters consisting of males) with middle-aged respondents (three out of every four participants was aged between 31 and 40 years) who worked in the tea estates (Table 2).

Male predominance in the labour force has been documented elsewhere (Comblon et al., 2017; Brixiova and Kangoye, 2016). About half of the sample had secondary education whereas less than a quarter possessed college or university education. The rest had either primary or no education. This suggested that though most of the respondents had modest education a few were well educated.

### Descriptive statistics of the independent variables

Respondents' opinions on elements of the Four Actions Framework in the Kenyan tea industry were sought. First, were questions on the factors that ought to be eliminated. Most respondents (Table 3) were of the opinion that the following factors should be eliminated: long and inefficient supply chains (53 and 35% agreed or strongly agreed), mismanagement of tea factories (64 and 29% agreed or strongly agreed) and the many middlemen and brokers (69 and 22% agreed or strongly agreed). The respondents were asked about the factors that the Kenyan tea industry should reduce. Most respondents (Table 4) felt that KTDA should reduce management fees it charges farmers (42% and 52% agreed or strongly agreed), production costs of tea should reduce (42 and 50% agreed or strongly agreed), and diversify overseas markets (57 and 33% agreed or strongly agreed).

In addition, respondents also felt factories should reduce climate effects and bulk exports of tea. The



**Figure 1.** The current image of the Kenyan tea industry relative to India's and Sri Lanka's

**Table 2.** Respondents' characteristics.

Bio-graphic information	Categories	Frequency	Percent
Respondents' gender	Male	192	80
	Female	48	20
	<b>Total</b>	240	100
Respondent's age (years)	21-30	60	25
	31-40	167	69.6
	41-50	13	5.4
	<b>Total</b>	240	100
Highest education level	None	13	5.4
	Primary	67	28
	Secondary	132	55
	College	11	4.6
	University	17	7
	<b>Total</b>	240	100

Source: Primary data.

study also sought the opinions of respondents on factors the Kenyan tea industry should raise.

Most respondents felt that the industry should aim to make people drink tea in place of other substitutes such as soft drinks, water, coffee and alcohol (43 and 50%

agreed and strongly agreed, respectively (Table 5). Many respondents also felt that the following factors should be raised: appeal to tomorrow's consumers, especially young people (58 and 30% agreed or strongly agreed), increase farmer roles in decision-making in factories (66

**Table 3.** Factors that should be eliminated from Kenyan tea industry.

Approach	SD		Disagree		Undecided		Agree		SA	
	Fq	%	Fq	%	Fq	%	Fq	%	Fq	%
Eliminate too many middlemen and brokers	8	3.4	13	5.2	0	0	166	69	54	22.4
Eliminate long and inefficient supply chain	0	0	25	10.3	4	1.7	128	53.4	83	34.5
Eliminate mismanagement of tea factories	8	3.4	8	3.4	0	0	153	63.8	71	29.3
Eliminate KTDA	50	21	94	39	48	20	27	11.3	21	8.7

S.D=strongly disagree, S.A=strongly agree, Fq=frequency; Cronbach's Alpha: 0.803  
Source: Primary data.

**Table 4.** Factors that the Kenya tea industry should reduce.

Approach	SD		Disagree		Undecided		Agree		SA	
	Fq	%	Fq	%	Fq	%	Fq	%	Fq	%
Reduce overdependence on a few export markets	0	0	16	6.7	8	3.3	136	56.7	80	33.3
Reduce bulk exports of tea	12	5.1	37	15.3	44	18.6	114	47.5	33	13.6
Management fees charged by KTDA	0	0	0	0	16	6.7	100	41.7	124	51.7
Climate effects	4	1.7	56	23.3	23	9.6	88	36.7	69	28.7
Reduce production costs	0	0	8	3.3	12	5	100	41.7	120	50

S.D=strongly disagree, S.A=strongly agree, Fq=frequency. Cronbach's Alpha: 0.823.  
Source: Primary data.

**Table 5.** Factors that should be raised in Kenyan tea industry.

Approach	SD		Disagree		Undecided		Agree		SA	
	Fq	%	Fq	%	Fq	%	Fq	%	Fq	%
Appeal to tomorrow's consumers	12	5	12	5	4	1.7	140	58.3	72	30
Improve the quality of tea	4	1.7	16	6.7	16	6.7	132	55	72	30
Increase the quantity of tea bought by better marketing	0	0	28	11.7	28	11.7	124	51.7	60	25
Increase domestic consumption of tea	0	0	33	13.6	16	6.8	171	71.2	20	8.5
Increase farmer roles in decision-making in factories	8	3.4	4	1.7	16	6.8	159	66.1	53	22
Make drinking tea an experience or luxury	0	0	40	16.7	24	10	128	53.3	48	20
Substitute tea for other drinks e.g. soda, beer, water, coffee e.t.c.	0	0	0	0	16	6.7	104	43.3	120	50
Increase tea productivity per hectare	0	0	16	6.8	33	13.6	118	49.2	73	30.5

S.D=strongly disagree, S.A=strongly agree, Fq=frequency. Cronbach's Alpha: 0.845.  
Source: Primary data.

and 22% agreed or strongly agreed) and improve the quality of tea produced (55 and 30% agreed or strongly agreed).

They also felt strongly that factories should implement better marketing to increase the quantity of tea sold, increase domestic consumption of tea, increase productivity of tea per hectare and make drinking tea unforgettable experience.

Furthermore, they were asked on what the Kenyan tea

industry should create. Most of them (Table 6) averred that the industry should brand its tea before exporting (45 and 55% agreed or strongly agreed), add value to the tea, for instance by making green and herbal teas (49 and 31% agreed or strongly agreed), and use larger packing (47 and 25% agreed or strongly agreed). Lastly, the study sought respondents' opinions on how the above factors (BOS) could potentially lead to sustainable performance. Most of them (Table 7) opined that BOS

**Table 6.** Factors that the Kenya tea industry should create.

Approach	SD		Disagree		Undecided		Agree		SA	
	Fq	%	Fq	%	Fq	%	Fq	%	Fq	%
Brand the tea for export	0	0	0	0	0	0	108	45	132	55
Use larger packing	0	0	24	10	44	18.3	112	46.7	60	25
Add value to the tea e.g. making green and herbal teas	0	0	16	6.8	33	13.6	118	49.2	73	30.5
Single origin	0	0	24	10	32	13.3	128	53.3	56	23.3

S.D=strongly disagree, S.A=strongly agree, Fq=frequency; Cronbach's Alpha: 0.901.  
Source: Primary data.

**Table 7.** Sustainable performance.

Approach	SD		Disagree		Undecided		Agree		SA	
	Fq	%	Fq	%	Fq	%	Fq	%	Fq	%
BOS lead to economic prosperity of tea farmers and factories	0	0	37	15.5	25	10.3	104	43.1	74	31
BOS leads to social equity	4	1.7	40	16.7	24	10	124	51.7	48	20
BOS leads to better environmental protection	16	6.8	61	25.4	20	8.5	118	49.2	25	10.2

S.D=strongly disagree, S.A=strongly agree, Fq=frequency; Cronbach's Alpha: 0.78. **Source:** Primary data

lead to economic prosperity of both tea farmers and factories (43 and 31% agreed or strongly agreed) and social equity (52 and 20% agreed or strongly agreed). They also believed that BOS also leads to better environmental protection (49% and 10% agreed or strongly agreed).

### OLS regression analysis

First, the assumptions of OLS regression were tested. The highest Cook's distance was 0.102 while the maximum leverage value was 0.276, which was less than one and two, respectively. This indicated that no single case exerted undue influence on regression coefficients, hence, there were likely to be no extreme outliers in the

data. Homoscedasticity was examined via several scatterplots and these indicated reasonable consistency of spread through the distributions. The Durbin-Watson statistic was 1.796, which was between one and three, suggesting that the errors were not correlated. Correlations amongst the independents were positive but moderate (minimum = 0.105, maximum 0.612). In addition, tolerance values for all the independent variables ranged between 0.541 and 0.803. These indicated that multicollinearity was unlikely to be a problem. The predictors had moderate correlation with the dependent variable which indicated that the data were suitable for examination through multiple linear regression. The results of the OLS linear regression are presented in Table 8. The estimated equation for the linear model can thus be written as:

$$\text{Sustainable Performance} = -1.041 + 0.291 \cdot \text{Eliminate} + 0.314 \cdot \text{Reduce} + 0.435 \cdot \text{Raise} + 0.344 \cdot \text{Create} + \varepsilon$$

(2)

The  $\beta$  coefficients for all the predictors were significant and positive, implying that an increase in any of them would likely increase sustainable performance of the Kenyan tea industry. This suggested that the four independent variables were significant predictors of performance. For instance, the coefficient for Eliminate factors was 0.291, which means that when these factors are eliminated by one unit on its scale, sustainable performance increases by 8% (coefficient of determination

$= r^2 = 0.291^2$ ). Since the beta coefficient of Create factors ( $\beta=0.314$ ) is the greatest in magnitude, increase in these factors will have the greatest effect on sustainable performance, followed by Raise factors ( $\beta=0.251$ , Eliminate ( $\beta=0.241$ ), and lastly, Reduce factors ( $\beta=0.221$ ). For example, for an increase of one standard deviation in Create factors will increase sustainable performance by roughly 0.314 of its standard deviation.  $R^2$  in this model was 0.492. Thus, the four predictors could explain roughly



**Table 8.** Results of OLS regression on effects of BOS on sustainable performance.

Variable	Coefficients (SE)	t - value	Beta
Constant(C)	-1.041 (0.607)	-1.715	
Eliminate	0.291 (0.136)	2.131**	0.241
Reduce	0.314 (0.144)	2.182**	0.221
Raise	0.435 (0.147)	2.962***	0.251
Create	0.344 (0.087)	3.943***	0.314
R <sup>2</sup>	0.492		
F- Value	21.279***		
Adjusted R <sup>2</sup>	0.469		

SE = standard error. \*, \*\*, and \*\*\* = t value significant at the ten, five and one percent levels of probability, respectively.

Source: Primary data.

a half of the variance in sustainable performance, which was relatively high (Field, 2005). The remaining unexplained variation could be attributed to other factors not specified in the model and to the error term in the regression equation. If this model had been derived from the population rather than the sample, then it would have accounted for approximately 47% of the variance in the dependent variable, which is just about 2.3% less than what the model explains.

## DISCUSSION

The study's regression model suggests that implementation of the four factors could lead to sustainable performance of Kenya's tea industry. Respondents felt the industry has too many middlemen and brokers, who end up eating the revenue meant for farmers after selling tea. The tea supply chain in Kenya, from the farmer to the consumer, has been found to be extraordinarily long, with as many as 12 cost centres all eating revenue that should accrue to farmers (Monroy et al., 2013). This was seen on Kenya's value curve, which had the lowest tea farm returns compared to Sri Lanka and India. Kamau (2019) reported that smallholder tea farmers receive only 16 per cent of the consumer price paid in European markets while the rest is shared between brokers, marketers, traders, and bureaucrats. However, many participants rejected the elimination of KTDA, recognizing the unique role it plays from cultivation of tea, extension, transport, processing, warehousing, marketing and procurement of inputs (Monroy et al., 2013). For instance, KTDA adopted a singular policy of plucking only the top two leaves and a bud, resulting in a quality of tea that has been unmatched anywhere in the world. Nevertheless, respondents felt tea

factories should eliminate mismanagement. Studies have shown that KTDA does not allow factories to have free and fair elections; instead, it micromanages them, ensuring that elected directors are partial to it (Kamau, 2019).

The study also showed that management fees charged by KTDA are too high. This is consistent with findings by Kamau (2019), who showed that farmers only get 40% of their tea revenues, with the rest used to run factories, bureaucracy and the elongated value chain. For instance, of the Ksh 74 that a kilo of tea was sold in 2019, farmers only got Kshs 29. Respondents also wanted the reduction of bulk exports of tea and overdependence on a few export markets. This was in tandem with findings by Bolton (2017) and van der Wal (2008). The participants also felt production costs and climate effects should be reduced. Authors like Ateka et al. (2018) and Amde et al. (2009) have illustrated the steep costs in tea production, driven by skyrocketing energy costs, high cost of inputs, especially fertilisers and labour and high inflation, which further reduces farmers' income. Climate change effects, such as cold, inadequate precipitation, frost and hail have been found to adversely affect all activities of tea growing, from land preparation, plucking, processing and drying (UNIDO, 2017).

Factors that the tea industry should raise mostly aimed at improving domestic consumption, which was low on the value curve. For instance, respondents felt that tea should be promoted to an extent it substitutes other drinks that Kenyans use to relax and stimulate, such as soda, beer, water, coffee, chocolate and milk. Others want the industry to make selling tea an emotional and luxurious experience, akin to the coffee house, Starbucks. It could do so by setting up unique cafes, where customers could relax and drink customised tea prepared right in front of them. The industry could also

appeal to younger people/tomorrow's consumers, who do not find it fashionable consuming tea, as it is not 'cool'. They would rather drink 'Cappuchino', 'Caffelate' coffee, and other beverages instead (Afande, 2015). Factories should also improve the quality of tea and increase the quantity bought through better marketing. Gikunju et al. (2019) demonstrated a positive and significant relationship between various marketing strategies and performance of the tea industry in Mount Kenya Region.

Branding and adding value to tea were the most cited factors with respect to creation. The value curve showed that compared with Sri Lanka and India, Kenya is poor in branding its tea, exporting most of it in bulk form. Consequently, although Kenya exports more tea than any other country, it receives lower earnings. For example, in 2013, although Kenya exported 131 metric tonnes more than Sri Lanka, it earned 300 million dollars less (KIPPRA/ACBF, 2017). Despite many years, the country has continued to produce tea with little product differentiation and value addition, which has limited revenue. Branded, pure Kenyan blended tea could include herbal tea, green tea, flavoured tea, such as lemon, ginger, chamomile, and peppermint instead of the usual black tea (Wanjiru et al., 2015). The regression model predicts that create factors are likely to cause the greatest effect on sustainable performance, followed by raise factors. This suggests that the tea industry should urgently implement these factors, followed by eliminate and reduce factors.

## CONCLUSIONS AND RECOMMENDATIONS

This study investigated the relationship between BOS and sustainable performance of the Kenyan tea industry. The current strategy canvas showed that compared to India and Sri Lanka, the Kenyan tea industry competes poorly with respect to domestic tea consumption, branding and farmer returns. The study's regression model suggested that implementation of the four factors could lead to sustainable performance of Kenya's tea industry. Specifically, eliminating the many brokers and middlemen, long and inefficient supply chain and mismanagement will improve performance so will be the reduction of overdependence on a few export markets, bulk exports, management and production costs, and climate effects. The model predicts that raising domestic tea consumption, quality of tea, farmer roles and productivity and branding and value addition leads to sustainable performance. To ensure sustainable performance, the tea industry should add value and brand tea. It should also increase domestic consumption, productivity, reduce the supply chain and improve management of factories. Since BOS could explain about a half of the variation in sustainable performance, this

study suggests that further studies could be conducted in other sectors to explore the effect of these strategies on performance.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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