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PERCEIVED QUALITY AND PRICE VARIATION IN TEA MARKETING

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Abstract: Tea sector is an important part of Kenya's economy as a leading export earner. Kenya Tea Development Agency (KTDA) farmers' earnings in bonus payment fluctuate based on variation in tea prices, however farmers in the West of rift valley under KTDA factories are paid less compared to East of rift valley and this disparity has caused economic difficulty. The purpose of the study was to investigate the relationship between perceived quality and price variation in tea marketing. This was anchored on the Theory of Reasoned Action. The study employed correlational research design with cluster and purposive sampling procedures adopted to collect secondary and primary data. The primary data utilized a census of 128 tea brokers, tea warehouse and buyers who handle tea in Mombasa tea Auction. Cronbach alpha obtained for perceived quality was 0.706. Descriptive and inferential analysis was done using Microsoft Excel, SPSS and STATA. Simple linear regression analysis was used to test research hypotheses at 5% significance level. Perceived quality had positive significant relationship with price variation ($P < 0.05$). The study concluded that perceived quality had significant relationship with price variation. There is need to improve tea quality from West of rift valley through benchmarking and training which would result in better tea quality and changing the perception of the tea quality.

Keyword: Perceived Quality, Price Variation, Correlation Research Design, Kenya Tea Development Agency.

1. INTRODUCTION

Tea is one of the oldest beverage products known in the world. It is believed to have originated from China having been discovered in 2737 B.C. It spread to the world across Europe courtesy of trade and missionaries (Weinberg & Bealer, 2001). Tea found its way into Africa through Somali and Yemen for the first time as a trade commodity and later it was imported to Kenya from India for cultivation in early 1900s. Since then, Kenya has grown to become a key player in production and export of tea and is ranked 3rd in production of tea in the world after China and India (Voora, Bermúdez, & Larrea, 2019).

Tea is Kenya's leading export earner generating revenue of Kshs 129.3 billion in 2018 (EATTA, 2019). Kenya's tea trade is based in Mombasa where most of the teas particularly from small scale producers are sold through Mombasa tea auction. Evidence based on information extracted on second tea payments popularly known as "tea bonus" from KTDA points to a price variation (KETEP, 2015). The average 2nd payment rate for KTDA factories in the East of rift valley was generally higher compared to the west of rift valley tea for the years 2014-2019 indicating a price variation in 2nd payment rates. The overall average variance for 2nd payment rates for the same period was Kshs -14.88 between West and East of rift valley tea producing regions.

The study conceptualizes difference in 2nd tea payment rates between West and East tea production regions under KTDA factories as a price variation to smallholder tea farmers in the West of rift valley. According to KTDA (2019), smallholder tea farmers are paid a 2nd tea payment popularly referred to as tea bonus every

October based on auction price and financial performance of each tea factory Tea bonus is paid to smallholder tea farmers in addition to the monthly payment between Kshs. 20 to Kshs. 21 per kilogram of green leaf across all KTDA factories and therefore there are no significant price variations in the monthly payments compared to the 2nd payment.

Many attempts have been made to address price variation by various stakeholders, scholars and practitioners in the tea industry. The Government of Kenya through Ministry of Agriculture, Livestock and Fisheries (MoALF) and Tea Board of Kenya (TBK) have attempted to address irregular tea prices and price variation between the two major tea producing regions with limited success. Some of the efforts include formation of tea taskforce, modernization of tea auction, review of policies and regulations, amendment of tea act amongst other efforts.

Product quality is defined as superiority or excellence of a product or service and in marketing, quality alludes to the extent in which a product meets and or surpasses customer needs (Kotler, 2001). Rationally, high quality products and services are expected to meet and exceed the needs of customers and prices paid for the same goods and services are deemed commensurate with product or service quality. Most available literature on objective and perceived quality concepts reviews the concepts independently and little is known on the relationship between the two concepts and when applied together.

Other scholars who argue that quality is made of both objective and perceived quality include Keller (2013), (Grigg, 2021), Yang (2017) amongst others. Although their argument theorized that quality is categorized into objective and perceived quality where objective quality is defined from perspective of conformance to given standards or measures on physical product attributes (ISO, 2019) while perceived quality is the extent to which consumers needs and wants are satisfied, little is known when both objective quality and perceived quality are combined in one study.

Buntak, Adelsberger, & Nad (2012) explains that perceived quality is based on consumer's judgment about a product's overall excellence or superiority while objective quality also referred to as actual or real quality, infers "measurable and verifiable superiority on some predetermined ideal measure or standard". Mitra & Golder (2006) confirm the relationship between the two concepts arguing that change in objective quality takes a long time to be reflected in perceived quality, however more studies are required to arrive at conclusive findings when the two concepts are applied together.

Yang (2017) categorizes quality concept into metaphysical, production, economic and perceived quality approaches and the rationale for this approach was to harmonize the understanding of the quality concept. This study adopts this universal meaning and approach to quality on the basis that its central to the consumer and acknowledges product quality concept as a combination of both objective and perceived quality attributes applied jointly.

Apelbaum, Gerstner, & Naik (2003), Steenkamp, Van Heerde, & Geyskens (2010), Iglesias & Guillen (2004) and Yang (2017) did studies on price-quality relationship focusing on perceived quality found that there is a relationship between price and perceived quality. They highlight the importance of viewing product quality concept from an objective view based on measurable physical attributes in product that is largely influenced at production function and perceived quality that is domiciled in the mind of the target consumer influenced by use of product, experience, advertising of the product and the brand name which may be a summary of what the product means to the consumer. This study therefore conceptualizes perceived quality as part of product quality measured by garden name, location of the factory and quality opinions on repeated tea tasting sessions during tea marketing at Mombasa tea auction.

Tea growing regions in Kenya are mainly divided into two namely West and East of rift valley (Gesimba et al., 2005). East of rift valley tea producing regions include Meru, Embu, Tharaka Nithi, Nyeri, Kiambu and Muranga Counties which are clustered under KTDA regions 1, 2, 3 and 4. West of rift valley tea producing regions include Kericho, Bomet, Narok, Nakuru, Kisii, Nyamira, Nandi, Kakamega, Trans-Nzoia and Bungoma counties clustered under KTDA regions 5, 6 and 7 (KTDA, 2019).

Tea bonus payment is regarded as an economic boom with positive effects on social economic well-being of smallholder tea farmers. However, smallholder tea farmers from the West of rift valley continue to earn less bonus in contrast to their counterparts in East of rift valley over the past ten years leading to increased poverty and poor living standards. According to industry experts and practitioners, bonus price variation between the

regions may be attributed to product quality and demand at the tea auction. The study examined the relationship between perceived quality and price variation in tea marketing.

2.LITERATURE REVIEW

Perceived quality is simply defined as “the perception of a customer” on given product in respect to quality (Mitra & Golder, 2006). Perceived product quality concept in marketing is perhaps the key principle to satisfying consumers’ needs in a holistic manner and is the main driver of the marketing mix elements. According to Kotler & Keller (2012) product features and benefits are key elements of a product and they are supposed to be communicated to create a position in the mind of the consumer, priced appropriately and distributed well to reach the targeted consumer. Aaker (1996) argues that product features, design, quality attributes are antecedents of strong brand equity and cues performance and product quality perceptions meaning that product quality variation caused price variation. Most literature on perceived quality-price relationship associates perceived quality assessment with price, origin, value for money, customer satisfaction, customer loyalty, repeat purchases among other dimensions (Mitra & Golder, 2006; Iglesias & Guillen, 2004; Espejel et al., 2007).

Perceived quality-price literature evolved from objective quality starting from 1980s and some of the literature include Garvin (1984), Steenkamp (1988), Iglesias & Guillen (2004), Espejel et al. (2007), Veale & Quester (2009). The authors built on the earlier literature on quality-price relationship with a more flexible methodology and approach to facilitate more focus on the consumer themes around quality-price relationship. The authors identified more insights that influence price perception and led to emergence and linking of more dimensions associated with quality-price relationship that include attributes associated with products but not physical product in nature.

Non-physical product quality attributes also referred to extrinsic attributes include consumer satisfaction, loyalty, brand association, imagery, product experiences and dimensions engrained in the mind of the consumer. These dimensions are perceptual in nature and most literature context on perceived quality are based in developed and high income economies and little is known on its application across developing countries, economies and different market contexts. As suggested by Burgess & Steenkamp (2006), there is need for more research in emerging markets to enrich existing literature on perceived quality-price relationship. The aim of this study was to determine if there is a relationship between perceived tea quality and auction prices within the context of a developing economy.

Garvin (1984) and Steenkamp (1988) literature on perceived quality are perhaps the foremost studies on record that attempted to develop a theory on early literature done on quality-price relationship. Garvin (1984) developed quality dimensions model that views the concept of product quality from a holistic perspective and developed multi-dimensional definition of quality. Garvin’s model is based on the pillars of the business organization and the consumer objectives arguing that product quality is key for a business to achieve competitive edge by meeting and surpassing consumer expectation. The author proposed use of quality dimensions as a framework for thinking about quality which includes Performance, Features, Reliability, Conformance, Durability, Serviceability, Aesthetics and Perceived Quality (Yang, 2017).

Subsequent literature divided quality dimensions into intrinsic attributes and extrinsic attributes categorization with more clarity and understanding, however extrinsic attributes have limited literature. According to Yang (2017), quality dimensions provide an opportunity to businesses to apply these concepts at organizational and brand strategy levels.

Garvin (1984) posits that the quality framework dimensions cut across functions internally and extends to the market place. The author suggests addition to quality correlates based on previous quality-price literature and recommends useful theories on quality-price relationship, however there is need for more empirical studies. The present study addressed quality-price relationship based on real commercial operations by examining if tea product quality has a relationship with auction prices.

Steenkamp (1988) investigated perceived quality of food products and its relationship to consumer preferences in Netherlands and found that inclusion of perceived quality in the model of preference formation leads to a significantly better explanation of preference. This explains the rationale for inclusion of perceived quality in quality-price relationship. The author also found that the role perceived quality plays in consumer decision processes is much more important for branded food products than for unbranded products. The author’s findings are important in explaining earlier studies’ findings on stronger quality-price correlation on

brands compared to private labels. however little is known on commodities such as tea and therefore the goals of this study is to investigate if there is a relationship between tea quality, demand and auction prices the impact of market supply.

Garvin (1984) and Steenkamp (1988) literature marked the transition between early literature and recent literature on quality-price relationship by linking objective and perceived concepts through introduction of more product quality themes that include customer/consumer satisfaction, advertising, imagery, market share, cost, country of origin, loyalty, repeat-purchase, purchase-intention, word of mouth amongst many others and therefore assisted in understanding quality-price relationship beyond transactional process.

The authors further introduced flexibility in methodology to facilitate deeper understanding of consumer's emotional and psychological behaviour. Conceptually, the authors ushered in new direction on perceived quality-price relationship literature with new thematic areas that remains under-explored and hence the this study investigates product perceived quality and price relationship using an alternative methodology under the tea auction context.

Iglesias & Guillen (2004) investigated impact of perceived quality and price on restaurant customers and found that perceived quality has a direct and positive impact on the level of customer satisfaction. The author's contribution to quality-price relationship is important and highlights antecedents of perceived quality and price correlations such as customer satisfaction. Other possible factors could include repeat purchases, purchase intention, loyalty among others. The context of this study was more of a service industry and there is need to explore product based literature to add to existing literature and one such product based research is the proposed application of perceived quality in marketing of tea through the auction process.

Espejel et al. (2007) did a study on the influence of perceived quality using intrinsic and extrinsic attributes on consumer satisfaction, loyalty and purchasing intention in Spain on olive oil and air-cured ham products. The authors adopted questionnaire surveys on consumers and analysed data using structured equation modelling and found significant influence of intrinsic perceived quality on satisfaction and loyalty, however there was no evidence on link between extrinsic attributes and consumer satisfaction and loyalty on olive oil. Further, the authors indicated that on air-cured ham the findings were in contrast to those of olive oil and indicated no significant influence on intrinsic perceived quality, while there was significant influence of extrinsic perceived quality on satisfaction and loyalty.

The contrasting results on the two product categories could be attributed to variation in brand strengths associated with promotional activities such as advertising to increase brand awareness, brand imagery and brand association. In future studies. there is need to take into consideration the effect of brand knowledge and other factors to minimise contrasting results. This study investigated relationship between perceived quality and price from the perspective of brand strengths based on the context of tea marketing.

Veale & Quester (2009) did an experiment on roles of intrinsic and extrinsic cues on Brie Cheese using a sample size of 263 and found price to be the most important attribute contributing to product quality perception and the findings agree with those of Steenkamp (1988) and Garvin (1984) on the role of perceived quality in quality-price relationship. The author argues that marketers cannot assume product intrinsic attributes implying that both intrinsic and extrinsic attributes work together in determining quality-price relationship. Although this study highlights the importance of intrinsic and extrinsic attributes, its results may not be generalized due to limitations in sampling procedure, smaller sample size in the context of experiments done. More studies are required with robust research design to cover more product categories. Present study set out to confirm if intrinsic and extrinsic product attributes work together in tea marketing. Steenkamp (1988) emphasizes the need to integrate intrinsic and extrinsic product quality attributes and the study adopted this approach by incorporating both objective and perceived product quality variables.

Olbrich & Jansen (2014) evaluated price-quality relationships using consumer panels, market shares and price tiers in Germany and found high correlation in national brands and non-food private labels meaning that higher product prices is a pointer to higher product quality. The study also found negative correlation for food private labels implying price is not a good quality indicator in such category of products.

The importance of this study is its ability to vary methodology and introduce market segmentation to enhance elements of consumer behaviour. Despite the importance of this literature, some areas remain under explored such as developing economies, other types of markets such as industrial, business to business, other types of products such as commodities.

Yang (2017) proposed a conceptual model that broadens understanding of quality and focus more on consumer value and innovation. The author attempts to bridge the extreme views by proponents of objective and perceived quality by advocating for a change in the way organizations need to view product quality by encompassing both objective and perceived quality by making the consumer needs the focal point. The author is building on the earlier works of Garvin (1984) and Steenkamp (1988) amongst other authors. Yang (2017), Garvin (1984) and Steenkamp (1988) line of thinking on product quality and consumer concepts are similar and their literature is rich in explaining the best approach to quality by recognizing evolution of quality across the value chain. Despite the importance of this literature, there is need to do more empirical studies to determine more factors that may have an effect on perceived quality and more so how the objective and perceived quality relate in the context of tea marketing where both concepts are applied concurrently.

Rao & Monroe (1988) investigated the moderating effect of prior knowledge on cue utilization in product evaluation and found that consumers with low-familiarity and high-familiarity on product exhibit stronger perceived quality-price relationship, and as product familiarity increases, use of physical product attributes to signal quality increases.

The authors highlight the importance of product familiarity to impute product quality and more specifically suggests that product quality could be derived from physical product attributes (intrinsic cue) or product related attributes (extrinsic cue). Conceptually, the authors systematically introduced how prior product knowledge and price are used as product quality indicators and their literature clearly explains how intrinsic and extrinsic product attributes are linked, however there is limited literature on application of both intrinsic and extrinsic attributes concurrently under the same context. The present study is to determine the relationship between tea quality (objective and perceived quality) and tea auction prices in tea marketing.

Yang (2017) argues that quality is a multi-discipline concept and evolves across the value chain from objective to perceived quality and applying this line of thinking in tea marketing, objective product quality attributes are expected to interact and build up to influence and result in perceived quality level. Repetitive objective quality tea tasting has led to establishment and formation of aesthetics (preferences, assessments, opinions etc.) and perceived value associated with the garden (brand) name. This is witnessed in tea industry perception that KTDA tea factories in the east of rift valley are perceived to produce relatively higher quality teas compared to the factories in the west of rift valley (ATB, 1995; EATTA, 2019). The study sought to establish if this perception is true by determining if there is a relationship between tea product quality, market demand and pricing. In tea marketing perceived quality is as important as the objective quality in determining prices and it is presumed that they complement each other in the context of marketing tea through the auction system.

In conclusion, perceived quality is as important as objective quality and it is used in positioning of products and brands in the minds of consumers leading to consumer perceptions (Mittra & Golder, 2006; Kotler & Keller, 2012; Aaker, 1996).

Product perceived quality concept is perhaps the most important concept in appealing to the emotional and psychological faculties of consumer and is built on the basis of products intrinsic values and communicated to the consumers in various ways. Rao & Monroe (1988) emphasises that as product familiarity increases, the use of intrinsic cues for product quality assessments tends to become relatively stronger. The authors emphasize on importance of consumer perceptions in explaining perceived quality-price relationship and little is known on the role of this concept in tea marketing under the context of auction market system.

Perceived quality based on preceding literature evolved from objective quality studies that were aimed at explaining findings associated with objective quality that were not in tandem with consumer behaviour. Some of the authors who contributed in this new trend literature include Garvin (1984), Steenkamp (1988), Iglesias & Guillen (2004), Espejel et al. (2007), Veale & Quester (2009). The authors developed key dimensions of extrinsic product attributes to explain the initial findings of objective quality and introduced more robust methods to measure quality-price relationship. The authors proposed sub dimensions or new themes that include customer/consumer satisfaction, advertising, imagery, market share, cost, country of origin, loyalty, repeat-purchase, purchase-intention, word of mouth among other factors. Despite the authors' substantive contributions to perceived quality-price literature, other potential areas of research include developing exhaustive list of consumer thematic areas, application of intrinsic and extrinsic concepts across different type

of consumers concurrently, application of more studies in different type of economies, product categories, markets and applying alternative methodologies.

Perceived quality literature has also witnessed introduction of a new trend literature that attempts to unify the approach to quality concept by arguing that quality is a multi-discipline concept and evolves across the value chain from objective to perceived quality (Yang, 2017). The author reasons that objective and perceived quality are linked and are applied together at organizational context with the focus being the consumer. This is a new trend in quality-price relationship literature that introduces more practical approach to quality and expands thematic area of extrinsic attributes of brands/products towards more consumer insights and being a new area there is need for more empirical studies on objective and perceived quality linkage across organizational value chain and more robust themes based on consumer insights.

2.1 Theoretical Framework

The study examined perceived quality using Theory of Reasoned Action which was originally developed by Martin Fishbein in 1960s was largely based on use of attitudes and beliefs to explain how consumers make purchase decisions. It evolved into a model to become theory of reasoned action (Fishbein & Ajzen, 1975) generally used to explain association between beliefs, attitudes, intentions, and behaviour in human actions (Albarracín, Johnson, Fishbein & Muellerleile, 2001). TRA is anchored on the principle that beliefs and attitudes are key determinants of behaviour and can be used to predict human behaviour when faced with decision making situations. This theory postulates that “consumers act or behave based on their intention to create or receive a particular outcome” influenced by beliefs, attitudes and subjective norms meaning that consumer behavior is a rational process that is intended to safeguard individual interests.

Hagger (2019) explains “The central construct of the theory is intention, a motivational construct that is considered the most proximal determinant of behavior. Intention reflects the extent to which an individual is likely to plan to do, and invest effort in pursuing, a given behavior”. TRA model argues that a person’s overall attitude toward an object is derived from his beliefs and feelings about various attributes of the object (Ahtola 1975, Loudon & Della Bita, 1993).

Reference to attributes of the object in products explicitly refers to product attributes such as quality attributes and product performance as experienced by the consumer. This is applicable to the study in terms of perceived quality and brand association which are operationalized in the study under brand (garden) name. Several empirical studies support TRA model and its key principles and they all agree that the theory is flexible enough to accept change or add variables to improve its ability to predict behaviour in specific contexts. Theory of Reasoned Action (TRA) and its contributions particularly on use of norms, action and reason concepts in behavior change driven by intended results has been widely praised and adopted for application in various fields by several other scholars. The studies include Davis, Bagozzi & Warshaw (1989), Sheppard, Hartwick & Warshaw (1988), Rutter & Bunce (1989), Azjen & Madden (1986), Terry, Gallois & McCamish (1993), Rossi & Armstrong (1999) amongst other scholars. They all support the architectural structure of TRA model and have reiterated the strength of TRA model as flexible enough to accept increase in variables and can be applied across different contexts.

TRA theory has also attracted several criticisms that include simplistic view of relationship between attitudes and actual behaviour (Oliver & Berger, 1979; Sheppard, Hartwick & Warshaw, 1988). The authors contend that there are always variables that mediate between intentions and behaviour and hence the need to take into consideration the effect of such factors (Warshaw, 1980). Inability to accurately capture and measure all salient attributes considered by consumers when forming attitude has been cited as a weakness (Solomon, Bamossy, Askegaard, & Hogg, 2006). This is attributed to complex buying situations that may involve both conscious and sub-conscious factors.

Further, TRA model assumes consumers or customers carry out comprehensive cognitive processing before buying which may not be the case (Bagozzi, Gurhan-Canli, & Priester, 2002). TRA model has been tested mainly in Europe and developed nations, however its applicability may not be clear and well known in other geographic regions (Solomon, Bamossy, Askegaard, & Hogg, 2006; Bagozzi, Gurhan-Canli, & Priester, 2002) and thus the need to test it in the tea industry in Kenya. TRA model’s use of intentional behaviour assume consumer intentions are static while in actual sense it’s a dynamic concept where situations constantly change such as out of stock, price offers, change in prices, store closures etc. that may necessitate change in purchase intention and thus intentional purchase behaviour is only provisional (Sutton, 2006).

TRA model has been improved over the last two decades to address weaknesses highlighted and make it a more robust theory. TRA model was extended to incorporate perceived control over behavioral achievement as a determinant of intention. This added significantly to the prediction of intentions (Ajzen & Madden, 1986). Improvements of TRA model has led to new theories that include Theory of Planned Behaviour and Engel, Kollat and Blackwell Models. Notable areas already improved include areas of measuring constructs and enhancement of concepts and it is believed that is the reason why Ajzen & Fishbein have continuously made improvement on the theory.

TRA model application in the study is anchored on tea buying process and behaviour. Tea buyers regularly conduct tea tasting sessions to determine tea product attributes and evaluate the products (ATB, 2019) based on consumer expectations and behaviour.

Buyers make informed decisions based on beliefs and attitudes such as opinions and preferences formed in terms of quality attributes, product performance and perceived quality play a major role in determining value of the tea and hence price offers during the auction. The tea buyers have the power to change their decisions in the buying process or post purchase based on information encountered, experience and interaction with the product. This involvement happens during tea tasting sessions to determine product attributes of made tea and perceived quality based on stored information using experience, interaction through advertising, promotion etc. Marketer's objective would be to influence customers' attitudes through awareness creation stimuli by tasting the teas to determine quality and performance attributes that are expected to meet and exceed expectation subsequently leading customers to bond with brands positively.

In the context of the present study, although made tea is sold through the auction, perhaps the key marketing attribute is product quality aspects that are both objective and perceived. Traditionally, the key buying decisions are based on quality of made tea as determined by crop husbandry and factory processing as evaluated by the trade that includes the brokers and buyers who taste the tea for quality assessment leading to formation of opinions on perceived quality and brand association using garden names. This is important for valuation of tea invoices by brokers and bid price indication for buyers. The level of made tea quality for all the grades as tasted and assessed by the buyers on weekly basis over several years has led to overall quality opinions and perhaps perceptions for each tea garden/mark. The assessed tea quality and garden/mark quality perception create specific expectations on tea buyers in terms of their needs and therefore value the invoices and fix a price that best represents the exchange process.

Price decision-making process is done for various competing gardens before, during and after every auction process comparing quality attributes and prices vis-à-vis performance of bought teas and expected results. Sometimes behavioral action is inhibited by other factors (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and therefore consumers may be inhibited from buying a particular garden because of better available alternatives or budgetary constraints. This happens because of the time lag consumers are given to make decisions particularly the auction process which may take several days or even weeks. Sometimes if there are explicit variances between the actual tea invoices and tasted samples, buyers normally raise the issue and even return the teas indicating that their needs and expectations have not been met.

3.0 Research Methodology

Using post positivism paradigm, the study adopted correlational research which allow the researcher conduct non-experimental research and test the relationship between variable (McBride, 2015).

3.1 population and Sample

The study was conducted based on information collected and relating to tea production areas in the West and East of rift valley which have seven regions referred to as clusters. The study's population of interest is PF1 made tea invoices for 65 individual KTDA factories that sold through Mombasa tea auction. Primary survey data relating to perceived quality was collected from 128 tea brokers and buyers who handle KTDA factories made tea at the tea auction. This study adopted both cluster and purposive sampling to determine cases for study.

3.2 Data and sources of Data

Primary data was collected using questionnaires which targeted tea brokers, tea warehouses and tea buyers at the auction in respect to perceived quality of tea brands from different garden names (factories). Perceived quality data was in form of a 5-point Likert scale that measured garden name and quality perceptions. Secondary data was used to collect auction prices were sought from tea brokers gathered for the period Jan

2017 to Dec 2022. The questionnaire which was used for primary data collection was tested for face, content and criterion validity which is important in achieving construct validity. The supervisor and experts check the accuracy of the instrument to achieve face, content and criterion validity. To examine the reliability of the questionnaires Cronbach alpha coefficient was obtained and the results achieved for perceived quality was 0.706 which were above threshold of 0.7 implying instrument was used to collect perceived quality data was reliable.

3.3 Descriptive Statistics

The primary data collected were sorted and entered into Statistical Package of Social Science for analysis purpose. Tea quality attributes used descriptive statistics that include percentages, frequency, mean and standard deviation. Inferential statistics utilized panel data to produce simple linear regression model, to test the hypothesis.

4.0 Results And Discussions

4.1 Descriptive Statistics - Perceived Quality

Perceived quality results were obtained using primary data from staff working in tea brokers, buyers, traders, and warehouses. The results were based on a scale of 1 representing the lowest score and 10 the highest score in quality. The results were outlined in the Table 1.

Table 1: Descriptive Statistics of Perceived Quality

Region	Gardens	N	Minimum	Maximum	Mean	STD
West	Rate Chebut gardens where 1 is lowest score and 10 is highest score	40	2.00	8.00	3.6000	1.25678
	Rate Mogogo gardens where 1 is lowest score and 10 is highest score	40	1.00	8.00	4.0000	1.41421
	Rate Kebirigo gardens where 1 is lowest score and 10 is highest score	40	2.00	9.00	3.7250	1.56872
	Aggregate				3.7750	.16717
East	Rate Imenti gardens where 1 is lowest score and 10 is highest score	40	3.00	10.00	8.9250	1.43915
	Rate Mungania gardens where 1 is lowest score and 10 is highest score	40	3.00	10.00	7.8750	1.38096
	Rate Mununga gardens where 1 is lowest score and 10 is highest score	40	2.00	10.00	8.1750	1.43021
	Rate Gachege gardens where 1 is lowest score and 10 is highest score	40	2.00	9.00	6.6500	1.33109
	Aggregate				7.9063	0.82028
	Total Aggregate				6.1357	2.13963

According to the descriptive statistics on perceived quality, teas from KTDA West of rift valley ranged from 36% to 40% in terms of perceived quality (mean of 3.6 to 4.0) while teas from KTDA factories East of rift valley ranged from 66.5% to 89.25% in terms of perceived quality (mean of 6.65 to 8.925). This indicated that perceived quality of teas from KTDA factories in East of rift valley was relatively higher with 79% (mean of 7.9063) compared to KTDA factories West of rift valley 38% (mean 3.7750).

The study further examined if there was significant difference between perceived quality of teas from the two KTDA production regions using ANOVA and results presented in Table 2 below;

Table 2: ANOVA for Perceived Quality on Region

			Sum of Squares	Df	Mean Square	F	Sig.
Perceived Quality * Region	Between Groups (Combined)		8923.721	1	8923.721	22505.675	.000
	Within Groups		845.755	2133	.397		
	Total		9769.477	2134			

The findings in Table 2 showed that there is significant difference in perceived quality of teas between the two KTDA production regions ($F(1,2133)=22505.675$, $P=0.000<0.05$). Further analysis was conducted to identify if there was association between perceived quality and KTDA production region with results presented below in Table 3;

Table 3: Measure of Association between Perceived Quality and Region

	Eta	Eta Squared
Perceived Quality * Region	.956	.913

Table 3 findings showed that perceived quality of tea has high association with the KTDA production region (Eta = 0.956). A variation of 91.3% in perceived quality of tea is associated with the KTDA production region, while 8.7% may be attributed to other factors.

Descriptive Statistics –Price variation

Analysis of tea auction price was done, and the mean price and standard deviation are in US cents per Kg for the period 2017 to 2022. The results were grouped into KTDA factories in East and West of rift valley using aggregate mean auction prices of tea and results presented in Table 4.

Table 4: Descriptive Statistics for Price of Tea

Region	Mean in US Cents	N	Std. Deviation in US Cents
East	300.17	1220	56.062
West	240.03	915	37.896
Total	274.40	2135	57.413

The results indicated teas from KTDA factories in East of rift valley had a mean price of US cents 300.17 per Kilogram while tea from KTDA factories in West of rift valley had a mean price of US cents 240.03 per Kilogram and the aggregate mean price of was US cents 274.40 per kilogram. The findings show KTDA factories in East of rift valley achieved higher prices at the tea auction compared to teas from KTDA factories in West of rift valley with standard deviations of US cents 56.062 and 37.896 per kilogram of tea sold at the auction respectively. Analysis of variance (ANOVA) in tea prices by region was done and findings are summarized in Table 5 below;

Table 5: ANOVA for Price of Tea by Region

		Sum of Squares	df	Mean Square	F	Sig.
Price of Tea * Region	Between Groups	1890488.918	1	1890488.918	783.935	.000
	Within Groups	5143811.435	2133	2411.538		
	Total	7034300.353	2134			

H₀₁: There is no statistically significant relationship between perceived quality and price variation in tea marketing.

The null hypothesis was examined using random effect simple linear regression model to test the relationship between perceived quality and price variation in tea auction and the results are presented in Table 6

Table 6: Perceived Quality and Price Regression

Random-effects GLS regression		Number of obs = 2,135	
Group variable: FACTORY		Number of groups = 7	
R-sq:		Obs per group:	
within	= 0.0000	min	= 305
between	= 0.9368	avg	= 305.0
overall	= 0.2892	max	= 305
corr(u_i, X) = 0 (assumed)		Wald chi2(1)	= 74.16
		Prob > chi2	= 0.0000

PRICE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
PQ	14.42128	1.674626	8.61	0.000	11.13908	17.70349
_cons	185.8692	10.88685	17.07	0.000	164.5314	207.2071
sigma_u	9.0802856					
sigma_e	47.802778					
rho	.03482559	(fraction of variance due to u_i)				

The findings indicated that perceived quality of KTDA teas had significant relationship with the auction price variation (Wald $\chi^2(1) = 74.16$, $P = 0.000 < 0.05$) with 28.92% variation in tea auction price associated with perceived quality of tea garden (R Square = 0.2892). The results further points to perceived quality of tea having a significant positive relationship with tea auction prices (Beta = 14.42128, $P = 0.000 < 0.05$) and the null hypothesis that there is no statistically significant relationship between perceived quality and price variation is rejected.

$$PRICE_t = 185.8692 + 14.42128PQ_t$$

A unit change in perceive quality of tea resulted in 14.42128 unit change in auction price of tea.

These findings agree with Iglesias & Guillen (2004), Espejel, Fandos & Flavian (2007), Veale & Quester (2009), Buil, De Chenatony & Martinez (2008) who found that perceived quality had a positive association with price. In this study, findings suggest that perceived quality of the garden name has significant association with the tea prices at the auction and based on ANOVA analysis, there is a significant difference in perceived quality between tea produced from KTDA factories in the East and West of rift valley.

5.0 Conclusions And Recommendations

KTDA West of rift valley range from 36% to 40% in terms of perceived quality (mean of 3.6 to 4.0) while teas from KTDA factories East of rift valley range from 66.5% to 89.25% in terms of perceived quality (mean of 6.65 to 8.925). Analysis of variance indicated that there was significant association between perceived quality and tea production region ($P < 0.05$) which was further confirmed by measure of association (Eta = 0.956). Regression analysis on perceived quality and price variation results indicated that perceived quality of KTDA teas which is based garden names had significant relationship with the auction price variation (Wald $\chi^2(1) = 74.16$, $P = 0.000 < 0.05$), however the relationship was weak (R Square = 0.2892).

On perceived quality, KTDA teas from East of rift valley were perceived to be of relatively higher quality compared to KTDA teas from factories in West of rift valley and there is a significant difference in perceived quality between the two production regions with teas from KTDA factories East of rift valley associated with relatively high quality compared to teas from KTDA factories West of rift valley and similarly, KTDA teas perceived to be of high quality attract higher prices at the tea auction compared to KTDA teas perceived to be of lower quality which realize relatively lower prices.

5.1 Conclusion

The study concluded that there was a positive significant relationship between perceived quality and price variation. This indicated that teas from KTDA factories in the East of rift valley were perceived to be of higher quality compared to KTDA teas from West of rift valley and higher perceived quality led to higher auction prices. The differences in perceived quality of tea from KTDA factories led price variation between the two production regions and may be attributed to objective quality achieved through tea tasting sessions before tea is offered to the auction.

The study concluded that demand and prices are inversely related, when demand for tea at the auction increases, prices of tea declines and vice versa. This being an auction market done on weekly basis, prices were expected to be relatively inelastic, however due to expected changes in demand based on previous week's activities, the relationship between demand and prices will be inverse. Traders based on market information that includes quantity supplied and social economic activities in destination markets will anticipate level of demand and therefore prepare to bid accordingly with low quality teas being bought are lower prices as opposed to rejection.

5.2 Recommendations

On perceived quality, the study recommends adoption of best practices by KTDA factories in the West of rift valley to consistently improve objective quality which may lead to formation of preferences and positive opinion leading to improvement in perceived quality. Creation of awareness to improve garden image and high-quality perception will be necessary to enforce positive quality image. Industry based quality campaigns required to improve overall quality perceptions for tea factories based in west of rift valley to improve perceived quality and attract better prices at the tea auction.

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