



## **The Influence of Parking Location and Competitive Forces on the Economic Performance Of Car Taxi In Kisumu City, Kenya**

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### **ABSTRACT**

Car taxi business has been a source of livelihood for many people in Kisumu City. However, studies indicate that their economic performance has been on the downward trend. Whereas the decline could be attributed to several factors; it is not clear whether location of parking space and competitive forces, occasioned by city planning has influenced the decline. Therefore, the purpose of this study is to investigate the influence of parking locations and competitive forces on the economic performance of car taxi in Kisumu City. This study uses ex post facto research design, while adopting a mixed method approach which utilizes both quantitative and qualitative data. These were collected by means of interview schedules and questionnaires. Quantitative data was analyzed using Chi-square and regression analyses while qualitative data was analyzed through content analysis. The study concludes that location of car taxi parks and bargaining power of taxi operators have significant influence on the economic performance of car taxi business in Kisumu City. Consequently, it recommends that Kisumu city council should develop relevant policies to level the field for taxi operators and improve taxi service quality.

**Keywords:** Car Taxi, Economic Performance, Kisumu City, Parking Location.

**JEL Classification:** L90, L91, D40, D41, R40

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### **1. Introduction**

Since Kenya's 2007/2008 post-election violence, Kisumu City has witnessed tremendous increase in infrastructural development. This was further given impetus with the introduction of County governance system in 2013 after a change of the country's constitution in 2010. These developments have seen changes in the spatial infrastructure within the City. In particular, there has been a reduction of car parking zones to create room for office blocks and the expansion of access roads. Additionally, new office blocks and commercial buildings do not provide adequate parking spaces and no new stand-alone car parking stations have recently been proposed (Kokwaro et al., 2013). With limited car parking areas coupled with the City's desire to encourage the use of public transport, parking fee has increased to 100 from 50/= per day in a period of 2 years. This has made car taxi business a little more expensive to operate (Rugut, 2015).

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Since the advent of the new County Governance system, County headquarters have become magnets of development and opportunities thus attracting increased rural to urban migration with hopes of improved economic power. In the transport system, formerly dominated by “matatus” (usually nine to fourteen passenger public transport vans) and bicycle taxis, new alternatives like rickshaw and motorcycle taxis have emerged in great numbers. Coupled with an increase in the use of private cars for urban transport, these alternatives have given car taxis and matatus a hard time to stay in business. Indeed, studies have shown that competitive activities in the transport industry have led to a decline in the economic performance car taxis in Kisumu (Kokwaro, Ajowi, & Kokwaro, 2013; Owiti 2013). In particular, Owiti’s (2013) study on five car taxi stages indicated that the number of car taxis in Kisumu city had gone down by nearly 61% between the year 2008 and June, 2012. However, it is not clear which factors have had a significant impact on the economic performance of car taxi business. Accordingly, this study investigates the impact of parking location and competitive forces on the economic performance of car taxis in Kisumu City.

This study employs two theories. The first is the concept of strategic management according to Mintzberg, Ahlstrand, and Lampel, (1998). They posit that the success of a business largely depends on the strategic management approach it takes. Mintzberg and collaborators suggest that strategic management consists of five Ps; namely Plans, Patterns, Positions, Perspectives and Ploys. Plans relates to future actions of a business, for instance whether they want to reduce the prices of their commodities or launch a new product. Patterns are unintended guides that result from repeated behavior. For instance, serving a high price customer spectrum due to a firm’s search for quality which leads them to produce priced communities that can only be afforded by people with high disposable income. Position is about the location of a business in a geographical place in order to target a given market. Perspective is vision of a firm which guides and inspires the development of its strategy. Ploys are tactics intended at defeating a competitor. Thus, they are moves that are intended to dissuade a competitor from taking an action that will put the firm employing the ploy at a disadvantage. This study uses the position strategy to assess the impact of taxi location on their profitability. The second concept is Porter’s theory of competitive forces (Porter, 2008) which this study uses to assess the impact of competitive factors on car taxi profitability. The theory posits that the profitability of an industry depends on five basic forces: the bargaining power of the customers, the threat of substitutes, bargaining power of suppliers, threats of substitutes and the Jockeying for position or rivalry among operators.

The rest of the paper is dedicated to how this study was done. We first present the methodology, then the results and discussions and conclude with a few policy recommendations.

## **2. Methodology**

### **2.1 Research design**

The research design used in this study is ex-post-facto. It is chosen because it enables one to study things one cannot control. In this study, the allocation of car taxi parking spaces could not be controlled by the researchers for it had already occurred and had to be worked with as it was.

### **2.2 Study area**

The study was conducted in Kisumu City which is the headquarter of Kisumu County, Kenya. The City lies between the coordinates of -0.10 latitude and 34.76 longitudes at an elevation of 1174 meters above the sea level, with a total land area of 32.7Km<sup>2</sup>. The City has a total population of about 216, 479 in 2009 and was projected to be at about a million (daytime population) by 2016 (KNBS, 2009). Transport and communication within Kisumu Central Sub-County where the City is located is fairly developed, with public transport mainly provided by car taxis, matatus, buses, rickshaw taxis, motorcycles, bicycles and private vehicles. The town is cosmopolitan and has trading as the major economic activity.

### **2.3 Sampling**

The population of car taxis within Kisumu City is estimated at 522 according to Taxi Operators’ Association 2016 records. Since the City’s central business district has 15 parking zones (Table 01), each zone was considered as a stratum and 30% of taxis were sampled, which according to Kothari (2009) is a sufficient and representative sample. Consequently, a total of 157 car taxi drivers were sampled for

the study. Convenience sampling technique was used to sample taxi driver in the 15 parking zones was. The drivers were sampled on a first come first served basis because they were in business and it was impossible to get them together without the need for compensation, resources for which the researchers did not have. As they came, they were served with questionnaires to fill in. The study targeted to interview all the chairpersons of the 15 parking zones but only 10 managed to be available for the interviews.

Table 01.

*Distribution of sampled taxis per parking zone in Kisumu City*

#	Car taxi Zone	Population	Sample (30%of population)
1	Nakummat Mega Plaza	64	19
2	Kisumu Hotel	24	7
3	Standard Chartered	33	10
4	Sarit Bookshop	18	5
5	Akamba / Easy coach/Lake market	14	4
6	Tuskys	48	14
7	Nakummat Mega City/Monami	36	11
8	Airport	64	19
9	Imperial Hotel	34	10
10	Octopus/Royal City	25	8
11	Palmers	8	2
12	Main bus park	38	11
13	Fanana Hotel	42	13
14	Kondele/Russia Hospital	56	17
15	Down town/Signature	18	5
	Total	522	157

Source: Kisumu City Taxi Operators Association (2016).

## 2.4 Data collection and analysis

This study used structured questionnaires and interview schedules as data collection tools. Each questionnaire comprised of both open-ended and close-ended questions. The participants were informed on the purpose of the study, time duration in filling questionnaires or having the interview as appropriate. Interviews were recorded and later transcribed using Express Scribe software for ease of analysis. Chi-Square test and descriptive statistics were used to analyze the influence of parking location on the performance of taxi business whereas regression analysis was used to analyze the impact of competitive forces on the performance taxi business while using SPSS software. Content analysis was used to analyze interview data.

## 3. Results and discussion

### 3.1 Influence of car parking location on Economic Performance of Car Taxi Business

Figure 01 shows the mean number of trips made by taxi per week and the mean weekly income which reveal that parking zones were different in terms of the calls a taxi received per week and even the mean weekly income. It was evident that Airport and Imperial car taxi parking zones were the most lucrative taxi stands in Kisumu City. Taxis at the Airport made the highest number of trips at about 30 trips per week. Similarly, taxis parked at Imperial hotel stand made approximately 28 trips per week. On the other hand, Kisumu hotel, down town/Signature, Palmers hotel and Sarit bookshop seemed to have had the lowest volume of taxi trips per week. The findings of the study show that car taxis operating in these taxi zones made not more than 10 trips per week. However, the reason for this low number of trips recorded could have been due to the fact that some of taxi stands like down town/Signature only boom at night, yet this study only interrogated daytime taxi operators.

It was established that taxis at Kisumu airport and Imperial hotel taxi stands were also the highest income earners, earning averagely K.Shs. 24,000 per week. Although the findings of the study

show that income made by taxi in a week is proportional to the number of trips made, this was not true for some of the taxi zones. For example, a taxi in Kisumu hotel zone only makes 10 trips per week but its average income of Ksh.17,000 per week is more than two-times the income of a taxi in Kondole/Russia hospital zone which makes almost twice the number (18 trips) of trips per week but only earns an average of K.S.h.7,000 per week. This was also replicated in Nakummat Mega City/Monami, Sarit bookshop and Tuskys / United Mall where the taxis only made relatively few trips yet

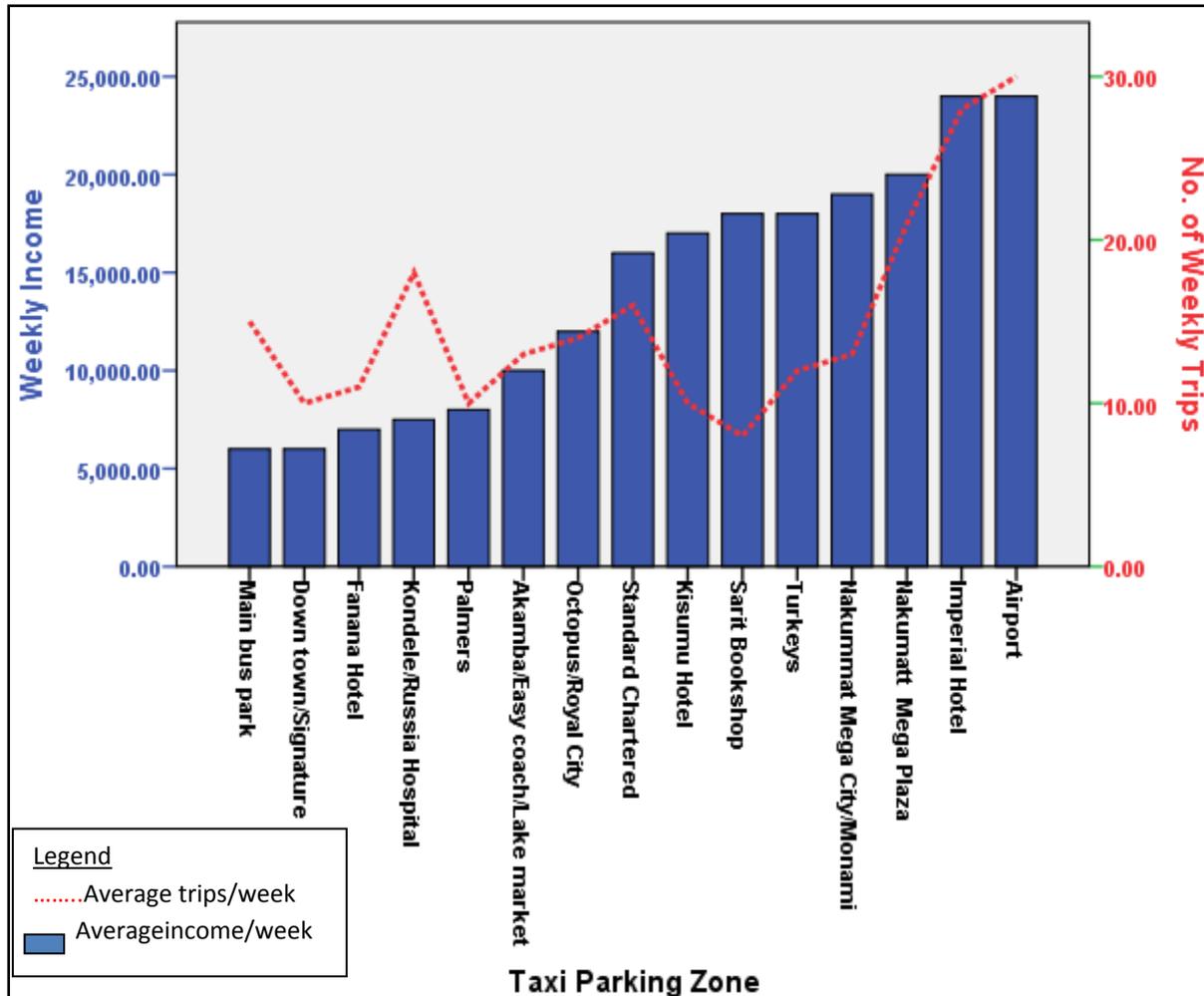


Figure 1. Average number of trips and income per parking zone in a week

they made comparatively a lot of money. At Nakummat Mega City/Monami, taxis made only an average of 13 trips per week but earned about Ksh.19,000 weekly. On the same note, at Sarit bookshop and Tuskys / United Mall, taxi operators earned an average of K.Shs. 18, 000 per week while making only an average of 8 and 12 trips per week, respectively.

On flip flop, the study established that car taxis at the main bus park make many more trips which incommensurate its weekly income; they averagely did 15 trips per week yet they were making only K.Shs. 6,000 per week. The implication of these findings is that performance of car taxi business in Kisumu City is location dependent. It is evident that some zones are more active than others, while on the same note some car taxi zones seem to be more affluent (in terms of customers) than others. To explore the market share of each zone for the car taxi businesses in Kisumu City, Figure 02 compares the contribution of each zone.

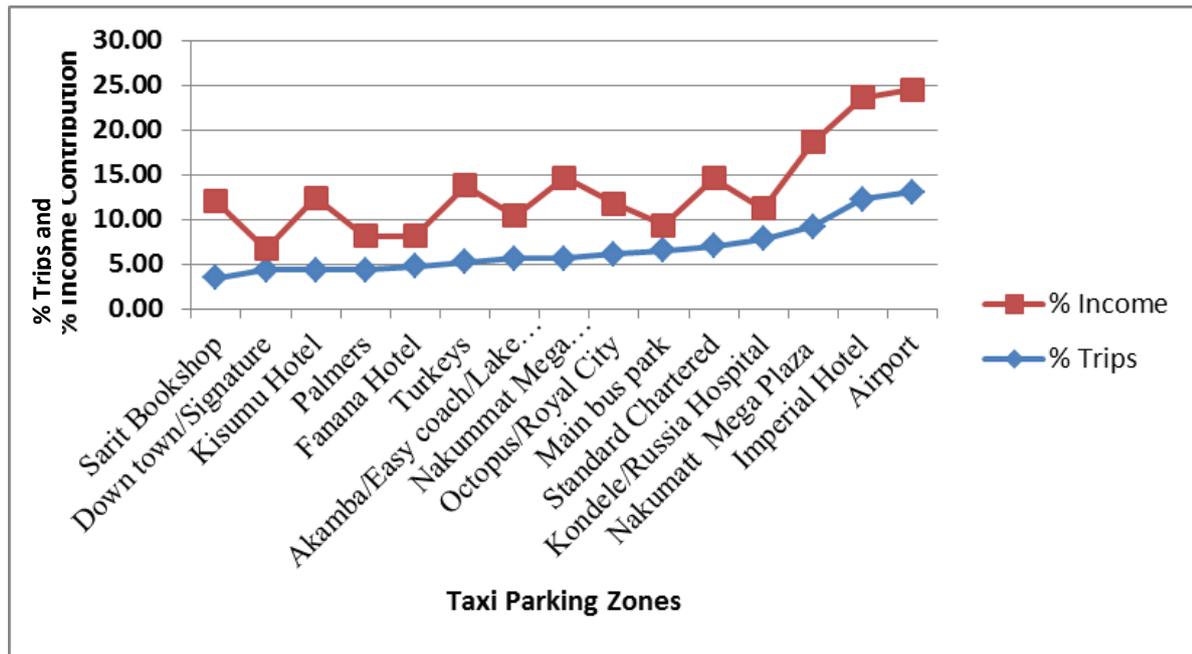


Figure 2. Car taxi market share in terms of percentage trip and percentage income

Figure 02 shows that Kisumu Airport and Imperial Hotel taxis claim more than a fifth (22.8%) of share of the total income generated from car taxi business in Kisumu City. The findings of the study show that car taxi business generated an average of about K.Shs. 211, 000 per week and out of this, 11.4% (Ksh. 24,000) was each contributed by Kisumu Airport and Imperial Hotel taxis alone. Kisumu Airport taxis contributed 13.1% of all the trips made by all taxis in Kisumu City. Similarly, 12.2% of the taxis trips in Kisumu City are accounted for by taxis at Imperial hotel stand alone.

It emerged that Sarit bookshop taxi zone accounted for the least (3.5%) contribution in terms of the number of trips made by all the taxis in Kisumu City. On the share of income, it was established that Down Town / Signature, main bus park, Kondele/Russia hospital and Fanana hotel each contributed quite negligible proportion of the total income generated by car taxi business in Kisumu City; the four parking zones contribute only 11.6% of the total share of income. The findings of a study conducted by Ragut and Makori (2015) agree with these findings that parking location influence economic performance of car taxi. Their study on bodaboda operators in Bahati town on the determinants of successful implementation of motor cycles transport business revealed that location of taxi stands impacted on the economic performance of motorcycles.

On the hypothesis test, this study sought to determine whether there was any statistically significant influence of parking location on economic performance of car taxi business. The null hypothesis was rejected when the calculated value of  $\chi^2$  was greater than the tabulated value of  $\chi^2$  at 5% level of significance (Table 2). Findings of this study indicate that there is a significant difference in economic performance of car taxis business given the location of the taxi parking. Since the calculated value of  $\chi^2 = 43,004.73$  was greater than the tabulated value of  $\chi^2 = 22.63$  at 5% level of significance at  $df = 14$ , there was statistically significant difference. Hence, the null hypothesis that there was no significant difference in the economic performance of car taxi business in Kisumu City given the location of parking space was rejected. The study, therefore, concluded that location of taxi parking zone has a significant influence on the economic performance of taxi business in Kisumu City. This implies that economic performance of car taxis in Kisumu City are location dependent, meaning that there are some car taxi parking zones that are more lucrative than others.

Table 01.

*Chi- square results on the influence of parking location on economic performance of car taxi in Kisumu city*

N	Df	$\chi_{\text{calculated}}$	$\chi_{\text{table}}$	A	Decision
157	14	43004.73	22.362	.05	Reject H <sub>0</sub>

This finding resonates with that of Sheldrake (2003), who portends that positioning of an organization is important to find their niche within their chosen market or environment. This involves deciding which customers to serve, what products and services to provide and how this will be done. It is rarely best to try serving all possible customers in a market, so the strategic positioning involves targeting particular groups and their needs. Having decided on strategic management objectives and a position where the organization might be successful in pursuing these objectives, management then has the on-going challenge of developing effective policies and making good decisions to steer its strategy and performance.

These finding were corroborated by comments from the chairpersons of the parking zones as sampled below:

“In this car taxi business, the location of parking is very important. There are some places where there are many customers, while some places have very few customers. Some places are busy and are known by many potential customers as taxi stands, others are not known” (Respondent # 6).

“Car taxi business in this base is only doing well at night, some other regions are busy throughout the day and have great potential for earning more money. Taxi business largely depends on where the taxi usually parks as regulated by the City Management Authority.” (Respondent #4).

These responses indicate that location of car taxi parking has a bearing on the performance of taxi business. Those who targeted parking locations with affluent customers did so in the hope that it will better reward their efforts. They employed the strategy of position in order to stay ahead of colleagues.

### 3.2 Influence of Competitive Forces on Economic Performance of Car Taxi Business

The study established the association between competitive forces and the performance of car taxi business. The result of the linear regression analysis indicates that one variable of the four variables under competitive forces is positively and significantly associated with the performance of car taxi business at 0.05 significance level (Table 3). Customer’s bargaining power is found to be positively and significantly associated with car taxi business performance (regression coefficient  $\beta=0.279$ ; 95% CI = 0.19 - 0.36, p-value < 0.001). The result showed that Rivalry (regression coefficient  $\beta = 0.027$ ; 95% CI = -0.04 - 0.09, p-value = 0.403), availability of substitutes (regression coefficient  $\beta = -0.006$ ; 95% CI = -0.74 - 0.73, p-value = 0.988) and availability of new entrants (regression coefficient  $\beta = -0.234$ ; 95% CI = -1.10 - 0.63, p-value = 0.593) had no association with car taxi business performance at 0.05 level of significance. This study’s finding of  $R^2 = 34.7\%$ , show that about 34.7% of the variation of car taxi business performance in Kisumu City is explained by the competitive forces and about 65.3% is explained by other factors for example car parking location among others (Table 03).

Table 02.

*Regression analysis of the effect of competitive forces on performance of taxi business in Kisumu city*

Competitive Force	coef.	[95% CI]	p-value
Bargaining Power	0.279	0.19 0.36	<0.001*
Rivalry/Jockeying	0.027	-0.04 0.09	0.403
Availability of Substitutes	-0.006	-0.74 0.73	0.988
Availability of New Entrants	-0.234	-1.10 0.63	0.593

R Square= 34.7%

This study’s finding contrasts that of Okwako (2017), which concluded that availability of substitutes has a significant positive association with taxi business performance. This is because the availability of substitutes (rick Shaw taxis and motorcycles) are cheaper for Kisumu’s populace when compared to car taxis. This would not be the case if the substitutes were more expensive than car taxis. Even though it has been noted that one can raise the price of rivals if one’s bargaining power is greater than that of the rivals (Dertwinkel-Kalt, Haucap, &Wey, 2015), this cannot apply with other alternatives to car taxis in Kisumu for they are simply cheaper to operate and maintain than are car taxis. However,

taxi operators noted among themselves that those who had better bargaining power than their customers and fellow taxi operators performed better than the rest even though the quantitative data did not capture it. While it is true that better bargaining power for taxi operators can increase their profit margins, prices that are subject to bargaining can and have opened the flood gates of exploitation of weak and foreign customers by taxi drivers (Toner, 1992). Seeing this evil, some cities and companies like Uber and Taxify have opted to have fixed charges per mile or kilometer covered by a client (Utharaja, 2012). This approach to pricing strips out bargaining power of suppliers and consumers in Porter's theory of competitive forces (Porter, 2008) out the taxi sector. Parking location will therefore only determine the number of trips an operator can have and not the price being paid for taxi services. In their place, profitability will partially be determined by publicity of once's quality of service which is a factor of condition of car, presentability of taxi drivers and courtesy to clients. Consequently, fixed or metered pricing per unit distance covered will have the overall impact of improving service quality and economic accessibility of taxi services since they are often cheaper (Malasek, 2016).

Although new car taxi entrants did not have a significant impact on car taxi profitability, it normally should if the market is saturated since every new entrant that stays in business will most likely take away from the customer base of existing operators (Dilek, & Top, 2012). Kisumu's case therefore means that car taxi customer base is not fully served by incumbent operators. This can be made possible by three reasons, namely, 1) Kisumu's population is gradually increasing; 2) taxi operators who leave business are replaced by new entrants at fairly the same rate; and 3) taxi operators bargaining power or adjusted prices cushion reduction in profits that are brought about by new entrants.

#### 4. Conclusion and recommendation

This study concludes that parking location of car taxi has a significant influence on taxi business economic performance and the current infrastructural modifications could have contributed to this. The location of parking considerably affects the mean number of trips made by taxi per week and the daily income. Some parking zones are more lucrative in terms of taxi business than others. Some zones are more active than others, while others are more affluent (in terms of customers) than others. The study further concludes that competition forces, and in particular bargaining power for Kisumu city, has a significant positive association with the performance of taxi business. However, prices that are open to bargaining power can led to the exploitation of weak and foreign customers. In light of these conclusions, this study recommends that Kisumu city council should develop relevant policies and plans to enhance profitability and equal opportunities in the transport industry. In particular, the pricing of taxi services should be regulated or metered thus eliminating negative effects of bargaining power and the element of customer affluent of parking locations. This will level the field for taxi operators and improve taxi service quality.

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