

## An analysis of customers' loyalty to banks in Ghana

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### Abstract

The increasing concern of banks about market share and customer equity in the light of unpredictable behaviour of customers has brought to the fore the pre-eminence of customer loyalty. This underscored the analysis of customers' loyalty to banks in Ghana. This study fitted a binary probit model, utilizing cross-sectional data from 130 customers of banks in the Wa Municipality. The results of the regression showed that satisfaction, bank type, distance, ATM facility, time to transact, switch cost, loan commitment, other facilities and auxiliary banking are the significant determinants of customers' loyalty to their main banks. Proximity to customers and infrastructure base of a bank are essential factors influencing customers' loyalty. Banks should consider establishing branches and providing ATM services within and without the municipality, to get banking closer to customers, as a way of reducing customer defection.

**Keywords:** Customer loyalty, banks, probit, customer satisfaction, Ghana

### 1. Introduction

Banking has become very competitive and requires that banks offer personalized and differentiating services, focused on the promotion of loyalty and satisfaction of customers, in order to be successful (Khaled and Abdul Rasoul, 2008). In the view of Afsar et al. (2010), it is expedient for banks to maintain existing customers and try to attract new ones by enhanced customer satisfaction and loyalty so as to secure long term profitability and ensure their survival. This is partly because, customers have more to do with a service company's profit than the scale, market share, unit cost and many other factors usually associated with competitive advantage. As a customer's relationship with the company lengthens, profit rises. Indeed, companies are able to increase their profit by almost 100% by retaining just 5% more of their customers (Reichheld and Sasser, 1990).

Even though the positive outcomes of perceived quality, customer satisfaction and loyalty have been the subject of several theoretical articles and empirical studies, the concepts have been employed indistinctively. However, Anderson and Sullivan (1993) argue that whereas satisfaction requires previous experience of consuming the product and relies on the price, perceived quality can be evaluated and does not normally depend on past experience and price. In fact, service quality has been found by several studies to have an effect on customer loyalty (Oliver, 1997; Chumpitaz et al., 2004; Kotler and Armstrong, 2006; Afsar et al., 2010) and although customer satisfaction and quality become visible to be important for all companies, Fornell (1992) observes that satisfaction is more important for loyalty in industries such as, insurance, automobiles, mail order and banks.

Approximately 40% of clients switched banks because of what they measured to be poor service (Leeds, 1992), whereas higher satisfaction, commitment, trust of the customers and switching cost are reflected in higher customer loyalty (Lauren and Lin, 2003; Beerli et al., 2004; Afsar et al., 2010). Loyalty is said to have a positive relationship with trust (Lauren and Lin, 2003) suggesting that when the trust of customers on a particular organization increases, it will be reflected in soaring loyalty. When perceived quality increases the greater will be the satisfaction and loyalty of customers (see Zikmund, 2001; Lin and Wang, 2006). Levesque and McDougall (1996) indicate that the bank's features (e.g. location), the competitiveness of the banks interest rates, the customers' judgments about the bank employees' skills and whether the customer was a borrower are all factors that drive customer repeat purchase. Customer satisfaction and high quality service often result in more repeat purchases and market share improvements (Laroche and Taylor, 1988; Levesque and McDougall, 1996; Buzzel and Gale, 1997; Hallowell, 1996).

The claim that it costs five to eight times as much to get new customers than hold on to old ones is key to understanding the drive towards benchmarking and tracking customer satisfaction and loyalty (Malcolm, 2008).

Also, the self-interest of bankers to cope with international competition is encouraging compliance with head branches regulations in the country without much concern to the particular area of operation and lesser attention to the individual account holders although unresolved problems have a negative impact on both continued product use and word-of-mouth recommendation. This is because dissatisfied customers tell far more people about their experience than routinely satisfied customers. Thus banks services to customers are of critical importance to customer loyalty (*ibid.*).

The Ghanaian banking system has undergone significant transformation and continues to improve with new regulations and guidelines seeking to maintain stability. This has brought about significant increase in the number of players in this sector. Currently, it has 23 licensed banks, out of which 11 are commercial banks, 6 merchant banks and 8 development banks all engaged in the same basic activities: that is taking funds from the public and investing to yield returns (Bank of Ghana, 2012). The banking industry's branch network continues to expand and currently exceed 700 nationwide (*ibid.*). However, market share for most of these banks has shrunk (see Malcolm, 2008) leaving most of them to scramble to boost customer satisfaction and keep their current customers rather than devoting additional resources to chase new potential customers.

Banking in the Wa Municipality of the Upper West Region of Ghana can be frustrating because of bureaucracies, bank charges (minimum balance requirement and banks' operational charges) as well as inadequate and poor banking facilities (such as small banking hall, inadequate number of tellers, lack of reliable Automated Teller Machines) which adversely affect the quality of the services rendered by banks in the Municipality. These also worsen the poor attitude of customers towards banking and stifling the abilities of the banks to mobilise more savings for prospective business persons to foster local and national economic growth and development. Banks operating very low minimum balance requirement attract a lot of customers thereby creating pressure on the few bank staff and crowding in the banking halls. As a result, some customers find operating with more than one bank as a way of coming around these constraints, a situation which makes customer retention a priority to these banks. Furthermore, the centralised nature of some of these banks without branches over the region (with the exception of GCB, ADB, Sonzele and Nandom Rural Banks) means that most banking transactions of the people of the region are conducted within the Municipality posing problems of accessibility and longer time taken to serve customers. Therefore, such banks have customers which have been with the bank for prolonged periods not because the customers are loyal. Earlier research also shows that longevity does not automatically lead to loyalty (Colgate et al., 2008).

These only attest to the significance of customer loyalty to organizational profitability, growth and development, and yet most studies on the subject focus on customer satisfaction and psychological issues and largely outside the banking sector. In the few cases that the focus is on the banking sector the concern has been on determinants of bankruptcy (see Ahmed, 2005) and the analysis has been very qualitative, failing to bring out any causal-effects relationships (Lind and Mason, 1997) or multiple linear regression has been used (see Afsar, 2010) which is also inadequate since loyalty in most of these studies is measured (and rightly so) as a categorical variable (see Maddala, 1992; Gujarati, 2004). This study diverges from the rest by looking at the determinants of customer loyalty in the banking sector using a non-linear discrete choice model (probit) to assess factors that do not only border on customer satisfaction and psychological issues, but also inculcate locational and infrastructure factors in Ghana. The other aspects of this paper are organized as follows: Section 2 consists of the methodology of the study, empirical results are represented in section 3, and section 4 draws conclusions from the results of the study.

## **2. Methodology**

### *2.1 Theoretical framework*

Customers' loyalties to a bank are expressed in two categories: "loyal" and "not loyal". This puts the analysis within the framework of binary choice models. Models for explaining a binary (0 or 1) dependent variable include the linear probability model (LPM), probit and logit models (Greene, 2003; Gujarati, 2004). However, the LPM has a number of shortcomings which include: non-normality of and non-constant (heteroscedastic) error terms, the unconstrained predicted probabilities to the 0-1 interval as well as the constant effect of the explanatory variable (Greene 2003; Hill et al, 2008). Because a regression with a binary dependent variable models the probability that the dependent variable is equal to 1, it makes sense to adopt a nonlinear function that restricts the predicted values to be between 0 and 1. This is attained by the probit and logit models. These models have been argued to have similar estimates (see Maddala 1992; Greene 2003; Hill et al, 2008).

Given the model:

$$L_i^* = \beta_0 + \sum_{j=1}^k \beta_j X_{ij} + \varepsilon_i \quad (1)$$

where  $L_i^*$  is a latent variable (not observable) and what is observed is a dummy variable  $L_i$  given by;

$$L_i = \begin{cases} 1 & \text{if } L_i^* > 0 \\ 0 & \text{otherwise} \end{cases} \quad (2)$$

and if it is assumed the variance of  $\varepsilon_i$  is equal to 1,  $L_i^*$  will be fixed from equations (1) and (2) and will give the probability below:

$$P_i = \text{Prob}(L_i = 1) = \text{Prob}[\varepsilon_i > -(\beta_0 + \sum_{j=1}^k \beta_j X_{ij})] \quad (3)$$

$$= 1 - F[-(\beta_0 + \sum_{j=1}^k \beta_j X_{ij})] \quad (4)$$

where  $F$  is a cumulative distribution function of  $\varepsilon_i$ . If it is further assumed the distribution of  $\varepsilon_i$  is normal, then

$$P_i = F(\beta_0 + \sum_{j=1}^k \beta_j X_{ij}) \quad (5)$$

That is, the probit model expresses the probability ( $P_i$ ) that  $L_i$  takes the value 1 to be as in equation (5). Granted that the observed  $L_i$  are from binomial process, we can deduce the likelihood function as:

$$L = \prod_{L_i=1} P_i \prod_{L_i=0} (1 - P_i) \quad (6)$$

If the errors  $\varepsilon_i$  in (1) follow a normal distribution, we have the probit model indicating the conditional probability as (see Maddala, 1992; Greene, 2003):

$$F(Z_i) = \int_{-\infty}^{Z_i/\sigma} \phi(t) dt \quad (7)$$

where  $\phi(\cdot)$  is a normal density function and its derivative is given as:

$$\phi(t) = \frac{1}{\sqrt{2\pi}} \exp^{-0.5t^2} \quad (8)$$

Because the coefficients  $\beta_j$  do not have simple interpretation (Greene 2003; Stock and Watson 2007; Hill et al., 2008), except that it tells how the variable is related to the dependent variable (*ibid.*), the model is best interpreted by computing the marginal effects. For the normal distribution, this is given as:

$$\frac{\partial E[L_i|X_i]}{\partial X_i} = \phi(Z_i) \beta_j \quad (9)$$

where

$$Z_i = \beta_0 + \sum_{j=1}^k \beta_j X_{ij} \quad (10)$$

This shows the effect of an increase in  $X_i$  on  $P_i$  and this effect depends on the slope of the probit function which is given by  $\phi(Z_i)$  and the magnitude of the parameter  $\beta_j$ .

## 2.2 Empirical model

In order to estimate the probabilities of customer expressing loyalty or non-loyalty to a bank, the authors specify a model that appears linear in parameters as,

$$L_i^* = X_i^* \beta + \varepsilon_i \quad (11)$$

where  $L_i^*$  is loyalty and a latent variable which can be related to the observable binary variable  $L_i$  through the expression

$$L_i = \begin{cases} 1 & \text{if } L_i^* > 0 \\ 0 & \text{otherwise} \end{cases} \quad (12)$$

The  $X_i$  is a vector of explanatory factors and consists of bank type, satisfaction, distance to bank from customers residence, customer gender, weekend banking, availability of ATM facility, adequacy of other banking facilities, switch cost, link failure, auxiliary bank, loan commitment and average time taken to transact; the  $\beta$  is the vector of unknown parameter estimates and the  $\varepsilon_i$  is the stochastic error term assumed to be normally distributed.

### 2.3 Variable description, data and study area

The description and measurement of the variables used in the model are presented in the table that follows (Table 1). Table 1 also shows the descriptive statistics of these variables and majority of the people interviewed (58%) either belonged to a commercial bank or development bank in the Wa Municipality. This is a reflection of the dominance of commercial and development banks in Ghana. The average distance to a bank from a customer's residence is 21.02 kilometers. This figure is explained by the location of about 20% of the customers outside the Wa Municipality. Majority, representing 54%, of those interviewed are males and only 31% of the respondents have loan commitments with their main banks. Weekend banking and automated teller machine (ATM) services are increasingly gaining prominence among banks in Ghana. However, whereas 65% of the respondents indicated that their banks had ATM services, minority (47%) said their banks had weekend banking services.

**Table 1: Definition, measurement and sample average of variables included in the model**

Variable	Definition and measurement	Average
<b>Loyalty</b>	Loyalty of a customer: 1 if a customer is frequent in transacting with the bank (repeat purchases) and prepared to recommend a bank i.e. loyal and 0 if otherwise	0.63
<b>Satisfaction</b>	Satisfaction of a customer: 1 if satisfied with bank services and 0 if otherwise	0.68
<b>Bank type</b>	Bank type: 1 if a bank is a commercial or development bank, 0 if otherwise (rural bank)	0.58
<b>Distance</b>	Distance to bank from customers residence: In kilometers	21.02
<b>Gender</b>	Gender of a customer: 1 if a customer is male, 0 if female	0.54
<b>Weekend banking</b>	Weekend banking: 1 if a bank operates on weekends, 0 if otherwise.	0.47
<b>ATM facility</b>	Availability of ATM facility: 1 if a bank has an ATM service, 0 if otherwise	0.65
<b>Time to transact</b>	Average number of hours spent during customer's last visit to bank on: 1. Check balance 2. Withdrawal and/or 3. Depositing money	4.16
<b>Link failure</b>	Frequency of link failure during last three visits: Number of times the link failed	1.24
<b>Switch cost</b>	Average cost involved in changing a bank:	0.31

	1 if switch cost is low and 0 if switch cost is high	
<b>Loan</b>	Loan commitment:	0.31
	1 if a customer ever had loan commitment and 0 if otherwise	
<b>Other facilities</b>	Adequacy of other banking facilities expressed as a perception index on the adequacy of seats, banking space, tellers and air conditioners:	0.55
	1 if these were perceived adequate and 0 if otherwise.	
<b>Auxiliary bank</b>	Customers with supplementary banks:	0.51
	1 if a customer ever had a supplementary bank and 0 if otherwise	

The study utilized cross-sectional data obtained from primary sources. Questionnaires were administered to customers of banks to elicit data on socio-demographic characteristics, customer perception, behaviour and experiences, locational issues, as well as conditions of bank facilities and operations. Key informant interviews were also used to gather information from the banks. The target population in this research was customers of all the banks in the municipality. A sample size of 130 customers was selected as follows:

$$\text{Sample size } (n) = (z^2 \cdot \sigma^2) / e^2 \quad (13)$$

$$n = \frac{1.65^2 \cdot 0.69^2}{0.1^2} = 129.71, (130) \quad (14)$$

In order to ensure representativeness a list of the customers of the various banks was constructed and the sample size drawn using a multi-stage sampling procedure. The first stage involved categorizing the respondents on the basis of banks and 13 customers were allocated to each bank. In the second stage, respondents were stratified on the basis of gender (sex) and 7 males and 6 females were selected from each bank.

The Wa Municipality is the capital of the Upper West Region which is located in the north-western part of Ghana and shares borders with La Cote d'Ivoire to the north-west, Burkina Faso to the north, Upper East to the east and the Northern Region to the south. The Wa Municipality lies within latitude 1° 40' N to 2° 45' N and longitude 9° 32' to 10° 20' W. It has a land mass area of approximately 234.74 square kilometres which is about 6.4% of the size of the region and a total population of 221, 905 (GSS, 2010). The major economic activity of the Municipality is agriculture, and petty trading and civil service among others constitute the minor occupations. The Municipality is a place of banks that fall largely in the categories of commercial, development and rural banks. The banks in the Wa Municipality are the Agriculture Development Bank (ADB), Societe-Generale Social Security Bank (SG-SSB), Stanbic Bank, Barclays Bank, Apex Bank, National Investment Bank (NIB), First National Bank, Nandom Rural Bank, Sonzali Rural Bank and Ghana Commercial Bank Ltd (GCB).

### 3. Discussion of results

#### 3.1 Levels of customer satisfaction and loyalty

Table 1 also reveals that the majority of the customers are satisfied (68%) and loyal (63%) to their main banks. The customers who indicated that they were satisfied with their main banks stated that these banks had most of the facilities they needed. Discussions revealed that they were able to perform almost all transactions with minimal inconveniences once they got to this bank which also explained their loyalty status. However, those who were found satisfied but not loyal to their banks cited distance as the main hindrance to their dealing with their main banks.

#### 3.2 Determinants of customer loyalty to a bank

Table 2 presents the results of the binary probit regression model. The model diagnostics indicate the overall predictive ability of the model stands at 81.54% implying that the model correctly predicts up to 82% of the probability of customers' loyalty to banks. The statistics also had a pseudo R-squared of 0.42 and a Wald chi-square of 56.34. This Wald chi-square has a probability of 0.000 indicating the pseudo R-squared and the Wald chi-square are statistically significant at least at the 0.01 level. This implies that all the explanatory variables (satisfaction, bank type, distance, gender, weekend banking, ATM facility, time to transact, link failure, switch cost, loan, other facilities and auxiliary bank) together explain the loyalty of customers to their main banks in the Wa municipality.

Table 2 also shows that all the explanatory variables have the expected signs. Satisfaction is significant at the 0.05 level. The coefficient implies that satisfaction has a positive relationship with loyalty of bank customers. The probability of customers' loyalty to their main banks increases by 0.214 when the satisfaction status changes from dissatisfied to satisfied. This is because customers are always concerned about the level of the services (such as interest rates and other bank charges) provided and the customer orientation of the bank before deciding about repurchase behavior and/or recommending the bank after using these services. This finding confirms that of Fox and Poje (2002) and Afsar (2010) that if a customer is satisfied, the loyalty rises automatically and this customer remains with the current providers for a longer period of time.

**Table 2: Binary probit regression result**

Variables	Coefficients		Marginal effects	
	Estimates	Z-value	Estimates	Z-value
<b>Satisfaction</b>	0.694**	2.26	0.214**	2.22
<b>Bank type</b>	0.619**	2.19	0.185**	2.15
<b>Distance</b>	-0.033***	-2.55	-0.010**	-2.41
<b>Gender</b>	0.357	1.19	0.104	1.22
<b>Weekend banking</b>	0.347	1.26	0.104	1.20
<b>ATM facility</b>	0.520*	1.75	0.148*	1.75
<b>Time to transact</b>	-0.163*	-1.70	-0.047*	-1.69
<b>Link failure</b>	-0.088	-0.83	-0.026	-0.83
<b>Switch cost</b>	-0.559*	-1.80	-0.174*	-1.72
<b>Loan</b>	0.503*	1.66	0.134*	1.68
<b>Other facilities</b>	1.043***	3.38	0.307***	3.69
<b>Auxiliary bank</b>	-0.709***	-2.49	-0.203***	-2.52
<b>Constant</b>	1.449	1.48		

**Model Diagnostics**

**Wald  $\chi^2=56.34$  Prob ( $\chi^2$ ) = 0.0000 Pseudo  $R^2=0.4241$  Predicted probability = 81.54**

\*, \*\* and \*\*\* denote significance at the 0.10, 0.05 and 0.01 levels, respectively.

The bank type determines the loyalty of the customer to his/her main bank. This is also significant at the 0.05 level (Table 2) and the coefficient shows that customers who have either commercial or development banks as their main banks are more likely to be loyal to their banks than customers with rural banks. The probability of a customer being loyal to his main bank increases by 0.185, when a customer moves from operating with a rural bank to a commercial or development bank in the municipality. Distance has been identified to be a key determinant of customer loyalty to a bank in the Wa municipality and this is significant at the 0.01 level. This has a negative relationship and the marginal effect shows that an increase in the distance to the bank from a customer's place of residence decreases the probability of being loyal by 0.010. This is an issue because the available banks have limited branches and other service outfit (such as ATM) in the region which makes frequent stay and transaction with these banks challenging especially for customers who reside in districts (such as Nadowli, Wa West and East, Jirapa, Lawra and Sissala districts) outside the Wa Municipality. The average distance of 21.02 km (Table 1) shows how some customers will have to endure in terms of fatigue and cost to get to their banks.

The availability of ATM facilities is significant at the 0.10 level, and has a positive effect on customers' loyalty to their banks. The coefficient suggests that customers of banks with ATM services (which include GCB, ADB, SG-SSB, Stanbic Bank and Barclays Bank) are more likely to be loyal than customers of banks without ATM facilities in the Wa municipality. The provision of an ATM facility has an effect of increasing the probability of a customer being loyal to the bank by 0.148. Discussions with the respondents revealed that banks with ATM facility and



services normally provide them with 24-hour service and access which increases flexibility and provides opportunities to respond to unforeseen needs of money. However, besides the limited services of the ATMs in the municipality to withdrawals and checking of account balances, issues of frequent breakdowns due to pressure on the limited facilities, and cases of link failures remain as major setbacks to the current state of these services in the municipality and in Ghana at large. Time taken to transact is also statistically significant at the 0.10 level. This has a negative relationship with the loyalty of a customer and the probability of a customer being loyal to a bank (i.e. transacting frequently and recommending the bank) decreases by 0.047 given an additional hour spent in the bank checking balance and making withdrawal and/or depositing money. On an average, a customer spends at least 4 hours in transacting banking business (i.e. from checking of balance to withdrawals and/or depositing) because in most cases each of these activities involves queuing.

Switch cost is significant at the 0.10 level. This defines the economic (accounting and opportunity cost) and psychological costs a customer will have to bear in changing a bank and it has a negative relationship with customer loyalty. This suggests that customers who perceive the switching cost to be high are more likely to be loyal to their banks than those who think otherwise. The probability of a customer being loyal to a bank decreases by 0.174 when the perceived switching cost changes from high to low. Mostly customers will have to meet the minimum balance requirement and also expend on stationery among others (accounting cost), forgo some amount in his/her account with the present bank (opportunity cost) and get some clearance and utility bill receipts (psychological cost) in order to switch a bank and all these pile up the switch cost. This is confirmed by earlier studies (such as Kon, 2004; Aydin and Ozer, 2005; Selnes, 2007) that the probability of a customer remaining loyal with respect to repeat purchase actions is higher when the switching costs are high for the customer. This is related to auxiliary banking which is defined as supplementary banks. Auxiliary banking also has a negative effect on loyalty and statistically significant at the 0.01 level. Customers with supplementary banks are less likely to be loyal relative to those without supplementary banks and the probability of being loyal decreases by 0.203 when a customer decides to have a supplementary bank.

Further, loan commitment is significant at the 0.10 level and has a positive sign implying that customers with loan commitment are more likely to be loyal to their banks than those without. This has the effect of increasing the probability of loyalty by 0.134. The adequacy of other banking facilities is significant at the 0.01 level, and an improvement in the state of these banking facilities (such as seats, banking space, tellers and air conditioners) increases the probability of a customer being loyal by 0.307. The pressure of customers on banks calls for adequate seats, banking space, tellers and air conditioners in banking halls for customers' relative comfort and convenience. However, up to 44% of the customers perceive these facilities to be inadequate in their banks (Table 1).

#### 4. Conclusions

This study employed the binary probit model to examine the determinants of customers' loyalty to banks in the Wa municipality. The study found that the levels of satisfaction and loyalty were high among customers of commercial and development banks relative to customers of rural banks in the municipality for reasons that have to do with levels of banking facilities. However, distance to banks from customer's residence was the main factor that caused some satisfied customers to defect from being loyal to their banks. This explains the significance of distance in influencing the loyalty of customers to their banks because some customers stay far from the Central Business District, where most banks are located and some even stay outside the municipality. Although, customer satisfaction was observed as a key determinant of a customer's loyalty to a bank, these were indeed related to the levels of services provided and customer orientation of banks. Commercial and development banks were identified as banks with loyal customers putting forward the implication of diversified activities (i.e. parallelism) carried out by these big banks in the municipality. ATM services promote customers convenience and flexibility thereby ensuring loyalty. However, this is plagued with challenges including inadequate ATM points for services which consequently lead to overcrowding in the banks and increasing the time taken to transact. The difficulties in switching a bank due to the economic and psychological costs associated with these changes makes switch cost a key determinant of customer loyalty. The proliferation of banks in the municipality poses a threat to customers' loyalty to a bank because customers with supplementary banks are less likely to be loyal to their banks. Loan commitment and adequacy of other banking facilities cause a customer to either be loyal or not loyal to a bank. This is because whereas loan commitment binds the customers to the bank, the other banking facilities attract the customer.

Banks should strive at diversifying their services in order to widen the range of their services because this is the advantage the commercial and development banks have over the rural banks in the municipality in terms of securing

the loyalty of their customers. Also, in order to reduce the defection rate of satisfied customers, banks should consider establishing branches at the other or some district capitals so as to bring banking to the doorstep of their customers. This will reduce the risk, cost and inconvenience of having to travel from far places to access their money. With this, the Bank of Ghana will need to loosen their rules and regulations regarding branch establishment. Banks should employ efficient and effective marketing strategies not only to be more customer oriented but also to adopt appropriate pricing policies to satisfy their customers because satisfaction has been identified to be linked to pricing. Banks in the municipality need to consider the provision of ATM services very important. In line with this, banks without ATMs should put in place ATM facilities and those with the facilities should increase the number of the existing ones. Also, these facilities should be put at vantage points in the area. Further investigation should be conducted into the operational features of these ATMs to assess the efficiency rate and the associated pressure on these facilities. The banks in the municipality should implement favourable loan conditions in order to attract and retain customers. This will require banks to deal with both the supply and demand side of these loans. However, caution should be taken to address issues of default.

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