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Including the customer in efficiency analysis:
evidence of a hybrid relational-transactional approach

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Including the customer in efficiency analysis:
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Abstract

Purpose
This paper illustrates the effect of including the customer as a resource in efficiency measurement. Variations in counting the customer illustrate the different impacts on efficiency between a transactional and a relational approach to bank branch marketing.

Design/methodology/approach
The paper uses Data Envelopment Analysis (DEA) to analyse the efficiency of the branch network under consideration. This technique, while well established in the bank branch efficiency literature, is used here to gain insight into how relationship and transactional paradigms are affecting performance.

Findings
Although the average profile of the efficiency scores was similar, the scores of the individual branches differed greatly depending on how customers were counted. Some branches then can be typified as relationship oriented while others as transactions oriented bearing in mind that all branches have both remits.

Practical implications
Future research in efficiency measurement should include customers as a resource of the bank given the importance of them for the activity of co-production. Careful consideration is required however of the method of accounting for these customers bearing in mind that different conceptualisations may significantly affect the efficiency score of the individual branches.

Originality/value
This paper sheds light on what is happening at branch level in a large network in the UK in terms of how transactions and relationship marketing approaches are affecting efficiency scores and the objectives of the branch. It also answers a call (Fruchter and Sigue, 2005) for research into organisations that simultaneously use relationship and transactions marketing.

Keywords: Relationship Marketing; Transactions Marketing; Bank branch; Data Envelopment Analysis

Type of Paper: Research Paper

Introduction

Resources in retail banking are used to support efforts in both transactional and relational marketing at the level of the bank but also at branch level. It is less clear however how these resources are allocated to branch level, the potential impact of the method of allocation on marketing efforts of the branch and the consequent effect on local branch competitiveness. Activities supporting both relationship and transaction marketing techniques are required by banks, and indeed also at branch level. However there are issues in effectively allocating resources to this scope of activity (Carson et al., 2004), and the consequent effect on the network and the customers. This paper extends this to consider how an emphasis on transactions or relationships has an impact on the efficiency score of the branch within its own network.

The paper unfolds as follows. A brief overview of how transactions and relationship marketing are used in branch banking is presented followed by a discussion of the current nature of a bank branch. The next section focuses on the conceptualisation of the customer at branch level. Continuing on from this, the methodology employed to assess efficiency, Data Envelopment Analysis (DEA), is presented, and the data collection procedures are described. The paper concludes with a discussion of the results and recommendations for further study.

Transaction and Relationship Marketing

Information technology, particularly the development of internet banking (Hernando and Nieto, 2007), deregulation (Hughes, 2006), the importance of customer retention (Ahmad, 2005) and changing customer dynamics (Walsh et al., 2004) have contributed to the creation of an extremely competitive financial services market not only in the UK but worldwide. This has led to the continued emphasis, by banks, on transactional marketing in order to

attract customers (Carson et al., 2004). The focus in such a context is on the single sale or the single event of a transaction. This has led to a stream on literature on bank branch efficiency (Oral and Yololan, 1990, Camanho and Dyson, 1999, Paradi and Schnaffnit, 2004, Portela and Thanassoulis, 2007) focusing on how best to use resources to produce more sales and transactions. However from the bank perspective, the focus has been on finding more cost-efficient methods to service customer needs for transactions services. By and large this has been achieved through a concentration on developing new channels for the customer using information technology such as ATMs and the internet.

Relationship marketing is also being used by banks in their attempt to retain their current customer base in the face of significant transaction marketing activity from their competitors (Walsh et al., 2004). Relationship marketing is most appropriate for services where there is personal interaction, a high degree of involvement and where the customer is willing to engage in the actions and behaviours necessary to form and maintain a relationship (Leverin and Liljander, 2006). Banks have become involved in relationship marketing to increase retention and to gain a higher "share of wallet" for higher net-worth customers (Walsh et al., 2004). However not all customers want to engage and as such it has been suggested that relationships in personal financial services are rare (O'Loughlin et al., 2004) and that they are being weakened by the continued insistence of banks to migrate customers to more cost-effective channels. This distancing from the customer requires the bank to contact customers and to maintain relationships with them (Leverin and Liljander, 2006) rather than pursuing the original dyadic conceptualisation of a relationship (Coviello et al., 2002) which is customer-led rather than provider-led. However banks are doing this against a background where the organisational systems and structures are predominantly configured to support transactional exchanges (Farquhar, 2004). In a study on banking in Sweden (Leverin and

Liljander, 2006 p. 243) suggests that 'the positive effects of a relationship marketing strategy on customer-perceived relationship satisfaction and loyalty have not been confirmed'. However Devlin (2005) finds that relationship factors are important in the choice of bank account.

This dissension within the bank between the activities of transactional and relational marketing is most closely felt at the branch due to the mixed messages being sent to customers (Carson et al., 2004). It is clear (Bruno-Britz, 2008) that relationship building has suffered as a result of the continuing efforts of banks to move their customers to self-service channels. Carson et al. (2004) and Walsh et al. (2004) suggest that resources need to be aligned in the bank to effectively support both activities given that they are essential to competitiveness. The next section will focus on the most expensive channel, the branch, and its role in relationship and transactions marketing.

Role of the Branch

Spieker (2004) reports that bank branches are a highly effective and profitable distribution channel for retail services relative to other methods like the internet or call centres. Analysis of choice criteria in banking (Devlin and Gerrard, 2005) has found that location is a key determinant in the choice of bank account, and this holds true whether the bank is the customer's main account or a secondary account. Durkin and Howcroft (2003) in discussions with senior banking officials ascertained that the branch is a key facilitator in the relationship marketing approach in all their banks.

Branches are not losing the battle to survive in contrast to other channels to the customer. It is clear that branches are still part of the strategy of retail banks in the UK and elsewhere.

Hirtle and Metli (2004) suggest that the increasing number of bank mergers and acquisitions evidences a renewed interest in traditional branch banking and is a challenge to the 'clicks and mortar' focus of many banks. More recent US evidence (Hirtle and Stiroh, 2007) notes that 86% of customers use a branch once a month versus 34% who use an internet channel in the same time period.

It is argued that the bank branch is now primarily a sales channel with the emphasis on transactions diminishing (Carson et al., 2004). This is certainly the case with the high street banks in the UK, and elsewhere, that aggressively target customers for different financial products, and try to get them to move their transactions online or at least to automated teller machines. This moving of transactions away from the branch is not without its costs however. One of the main sources of customers for sales is those customers who come to the branch to transact. This lack of focus on transactors as possible customers for larger products has caused the banks to spend even more resources on marketing to customers to encourage them to come into branches – locations they have been driven away from by facilitating their need to make simple transactions electronically either outside the branch, in their local shopping centre, or from the comfort and convenience of their own home.

The number of bank branches in the UK has decreased in recent years. With the level of takeovers currently in the market, it is likely that there will be more closures as banks try to consolidate their positions in increasingly competitive markets. The Campaign for Community Banking (CCBS) (2008) notes that there are 10,131 branches in the UK, over 20% of which do not offer full banking services to their customers. This leads to an increase in customers who have to travel to transact within a branch, making it more likely that their 'home branch' is not the same as the branch where they carry out the majority of their

transactions. It also means that they are more likely perhaps to change bank in order to avail of full services (Devlin and Gerrard, 2005). This change will engender a consequent drop in sales revenue for those banks that close branches.

Why do banks close branches? Banks close branches for a number of strategic and operational reasons. Strategically location of a branch makes a difference in terms of the potential sales revenue (Leyshon et al., 2006). One of the consequences of the waves of merger and acquisition activity in retail banking is the closure of branches. This has quite simply happened in many cases because the merged entity has two branches in the same street of the same town that were historically competitors. With the increase in commercial property rents, the disposal of rented properties has been an issue for banks for a number of years. As a result branches that are geographically close are often 'co-located' in order to save resources. A more strategic reason for branch closure in a particular area can be the availability of more suitable premises in geographic proximity, and though the net effect on the size of the network is nil, the network may experience productivity improvements. With the negative press (Broby, 2001, CCBS, 2008, Pratt, 1998) given to banks in relation to bank closures, it is difficult for banks to close branches. The main tactic employed then is to 'downgrade' them and provide a lower level of services. Operationally branches may be closed because bank management feel that they are not operating efficiently. The cost per transaction in-branch has been reported to be significantly higher than a similar transaction performed at an ATM or online (Foo et al., 2008, Hughes, 2006). It is this final aspect that can initiate the assessment of the viability of the branch and its possible downgrading or closure.

Branches, however, are still being used (Hughes, 2006) and they remain the main channel for customers (Ahmad, 2005). Banks are beginning to create a different experience for customers who visit branches (Bruno-Britz, 2008) with a focus on convenience through the utilisation of innovative multimedia technology in the branch. The focus for branches seems to be in more productive use of the space with a concentration on selling higher margin products face to face and also optimising the service encounter for customers (Hughes, 2006). Banks are more concerned with demanding targeted results from each branch with branch managers being empowered to do this (Grifell-Tatje and Marques-Gou, 2008). This emphasis on sales is not without its costs however, and Walsh et al. (2004) note that these include a lack of focus on the physical upkeep of the branch, and on the tangibles required to meet the needs of profitable customers.

Hernando and Nieto (2007) conclude in their analysis of bank performance that the internet delivery channel is being used as a complement to the existing channels and not as a substitute for branches, and Durkin and Howcroft (2003) note that the pure-internet banks are now either opening branches or allying themselves with an organisation that has a physical presence. Rather than using the internet channel instead of traditional channels the customer is using the internet as an additional channel for certain activities notably balance checking and small routine transactions such as bill payment. This has important ramifications for banks since instead of the internet reducing their cost structures, it is actually increasing them (Durkin et al., 2008). Although the cost per transaction is undoubtedly lower, it does not come without a significant fixed cost to the bank of setting up and maintaining a secure internet presence. Also many banks have not gained the operational benefits that they expected from the introduction of the technology because of the internet channel being "bolted on" to their existing operations. It is now an expected part of doing business as a

bank and to be without an internet channel is a significant issue for a bank that aims to meet the needs of its customer base. Operationally while the customer may see the internet channel as an extension of the branch, it is centrally managed and the management of the internet business is often constituted as a separate branch.

Counting Customers

Transaction-oriented marketing in banking is aimed at two distinct groups. The first is towards potential customers to attract them to the bank with the emphasis being on recruitment of new customers who are predominantly younger people (Walsh et al., 2004), getting customers to switch bank cognisant of ageing populations (Lindbergh et al., 2008), and gaining a larger 'share of wallet' of current customers. The second group is those customers who have been assessed by the bank as not being sufficiently profitable to merit being allocated a relationship manager (Storbacka et al., 1994) because they do not meet bank-defined criteria in terms of income, or need for financial services. Relationship marketing has a more long term focus with generally higher quality interactions between customers and bank staff (Grönroos, 1994). More resources are allocated towards these higher valued customers including separate marketing activities and assigned relationship managers. While both these marketing practices exist simultaneously there are some tensions and one of the issues is the diversity of customer types that are served by these varied marketing tactics.

In an industry where databases of customers are commonplace and geo-demographic systems are being used to target customers within defined geographic areas, the idea of who exactly is the customer is important. This is typified in retail banking where retail bank branches typically consider their customers as two main types: those who have their current account

with the branch and those who transact with the branch. These two groups intersect however in that account holders can transact at any branch in the network, and an account is not required for many branch services such as foreign exchange. Customers who have their account at the branch are branch-level targets for relationship marketing activities whereas those who transact fall into the efficiency remit of the branch as the focus is on serving them as efficiently as possible. Although these two types of customers are customers of the bank, branches are often allocated resources based on their 'customer base' and as a result, depending on how you count customers the resource allocation model could be quite different. Typically however the number of account holders is seen as the driving factor.

Historically a customer was seen as a person who has a current account at a bank. In studies which focus on segmentation of customers in a retail banking service, (Machauer and Morgner, 2001, Meadows and Dibb, 1998), the current customer is the focus of the analysis. This is the customer for whom the bank has data, i.e. the customers who have an account at the bank. While this is the case, the key issue now is what share of that customer's wallet does the bank have? Furthermore with the increasing range of products offered by banks, is a person who has a single insurance product that is sold from a bank branch a customer of that branch? Since the person generates sales for the branch and also uses bank resources in the purchase process, this person, and others without accounts, is a customer. Therefore we define a customer as a person who carries out a transaction at a branch or a person who has an account at the branch. This expansion of the traditional definition of the customer has important ramifications for the efficiency of the branches under assessment.

Methodology

This paper concentrates on one method that has been used extensively in the measurement of efficiency in a branch bank context: Data Envelopment Analysis (DEA). DEA is a frontier method that evaluates the performance of units relative to the total set of units under investigation. A frontier of best practice is created from among the units being assessed, and all other units are assessed against this standard. A more complete discussion of the advantages and disadvantages of using DEA can be found in Boussofiane et al. (1991). A review of the pitfalls and protocols in the application of DEA is provided in Dyson et al. (2001) with an additional financial services industry specific paper also available (Brown, 2006).

The DEA efficiency score is calculated as the ratio of the weighted sum of the outputs over the weighted sum of the inputs. As distinct from other weighted ratio models, DEA finds the optimal set of weights to show each unit under assessment in its best light in comparison with all other units under assessment. It allows different units of inputs and outputs to be incorporated into one measure of performance. A key feature of the method is that it makes a series of homogeneity assumptions. It assumes that the units are undertaking similar activities and producing comparable products in similar environments (Dyson et al., 2001).

The DEA model is as follows, where there are n units being assessed, $j = (1, 2, \ldots, n)$. Each unit has m inputs of value x_i, with weight v_i, $i = (1, 2, \ldots, m)$, and t outputs of value y_r and weight u_r, $r = (1, 2, \ldots, t)$. The efficiency of the model will be denoted by θ. The subscript o will be used to denote the unit currently under investigation. The DEA model can be formulated as a fractional linear program, as per model 1, and was transformed into a standard linear programming formulation by Charnes et al. (1978). One version of the model

must be solved for each unit to give each unit its most favourable set of weights. A more detailed exposition of the model can be found in Bussofiane et al. (1991).

$$
\begin{aligned}
&\max \theta = \frac{u_1 y_{1o} + \cdots + u_t y_{to}}{v_1 x_{1o} + \cdots + v_m x_{mo}} \\
&st \\
&\frac{u_1 y_{1j} + \cdots + u_t y_{tj}}{v_1 x_{1j} + \cdots + v_m x_{mj}} \leq 1 \qquad \forall j = 1, \ldots, n \\
&v_i \geq 0 \qquad \forall i = 1, \ldots, m \\
&u_r \geq 0 \qquad \forall r = 1, \ldots, t
\end{aligned}
\qquad \text{(model 1)}
$$

The outcomes of a DEA analysis include targets for their inputs or outputs for those units who are not efficient versus the units who are on the efficient frontier, in terms of the distance from the unit under assessment to the frontier of best practice. This is one of the key advantages of DEA for performance assessment in that the targets should be relevant and achievable as they are generated from best practice within a set of homogeneous units.

Efficiency analysis for financial services and branch banking in particular is well developed, with review articles of best practice appearing in the literature (Berger et al., 1993, Camanho and Dyson, 1999, Thanassoulis, 2009). As bank branches are relatively homogenous, they have been popular subjects for DEA models. The issue of the effect of including customers as a resource (Grönroos and Ojasalo, 2004) has not been incorporated into bank branch models of efficiency. More recent literature has attempted to investigate the ability of the branch to generate more customers (Portela and Thanassoulis, 2007) though the efficiency focus has been solely on customers that have accounts with the branch, whereas this research extends this perspective to include another type of customer: the customer as a transactor.

Model development

Dyson et al. (2001) determine four key assumptions with respect to the input/output set. They assume that it must cover the full range of resources used; that it captures all activity levels and performance measures; that the set of factors is common to all units and that environmental variation has been assessed and captured if necessary for homogeneity. Based on extant research in the area of branch bank efficiency and these guidelines, the theoretical model to guide data collection in the bank was developed as per table 1.

Inputs	*Outputs*
Space	Transactions
Staff	Sales
Customers	Customers
Information Technology	

Table 1: Theoretical form of the model

Given that the focus of the bank, at branch level, is to increase sales, an output orientation was specified for the DEA model. This facilitates the continuous improvement of the network and also creates opportunities for output-based targets to be generated from the DEA efficiencies to guide the performance improvement effort.

Data Collection

232 branches were taken from a larger network of a UK bank. The branches are concentrated into one geographical area of the UK. Data was collected at branch level for a period of five months from Jan to May 2002 using computer assisted telephone interviews with branch customers, and data held at head office. This period was taken because no major changes in bank structure had taken place at the time and as a result was seen to be in a steady state. The bank suggested that the results from this period would offer the best learning opportunity to the network because of the changes to the bank structure due to higher levels of closure and co-location of branches outside this period. Not all the data was available to populate the

theoretical model proposed in table 1. Table 2 presents the actual inputs and outputs of the model used.

Inputs	*Outputs*
Rent	No. of ATM Cash Transactions
No. of FTE Staff	No. of ATM Non-Cash Transactions
No. of Tills	No. of In-branch Cash Transactions
No. of ATMs	No. of In-branch Non-Cash Transactions
No. of Interview Rooms	Sales
No. of Customers at start of 5 month period	No. of Customers at end of 5 month period

Table 2: Input and output set used in the analysis

Space was not available for each branch so therefore the rent value was taken as a proxy for space. Given that some of the branches were owned a rent value was imputed for those branches using other operating data in a linear regression model. The physical characteristics of the branch were represented by the number of tills, automated teller machines (ATMs) and interview rooms. Tills and ATMs are used to generate transactions whereas interview rooms facilitate the sale of more complex financial services where an interview with a regulated seller may be required. On the input side, the number of full time equivalent (FTE) staff was included as staff, along with information technology, deliver service to customers. Customers are included as an input in that they co-produce service and also are the variable of interest in this model. The issue of how customers are counted is germane to the analysis so two different customer counts were derived: the number of customers who held their account at the branch were included in one model (the relational model), and the number of customers who actually transacted at the branch during the period were included in a second model (the transactional model).

On the output side, the number of transactions in ATMs and in-branch were aggregated into two distinct types: those involving cash and those not involving cash as the level of effort by

the branch staff is different for each type. Mixed transactions involving both cash and non-cash were allocated as cash type transactions as this is, in the main, the predominant aspect of those transactions that requires time. Sales were measured in points with the points system reflecting the complexity of the product and the level of effort required to sell it. This was in use in the bank at the time of the study, and it was used because it better reflected the effort of the bank staff to make sales rather than an emphasis on pure sales revenue which could be distorted by the mix of products sold. The number of customers at the end of the period was initially included in an attempt to model customer acquisition and retention activity.

A very high Pearson correlation (0.95, $p < 0.001$) between the number of customers at the start of the time period and at end of the time period was found. The number of customers at the start of the process was retained as customers are considered as a resource to be used in co-production (Grönroos and Ojasalo, 1994). In the interests of parsimony, useful to increase discrimination, it was decided to drop the customers at the end of the period and any increase in the customer base would be reflected in larger sales and transactions. ATM and in branch transactions are also disaggregated into cash and non-cash as a branch with a high volume of customers who can use in-branch electronic services efficiently can reduce staff if it can divert customers to ATMs for cash transactions (such as withdrawals). Customer data were available in two formats: allocation of customers to branches based on their main current account or allocation based on the branch they transacted at the most in the last six months.

Results

From the data in the branch network studied for this paper, 40% of customers have a most transacted branch that was different from the branch that their account was resident in. This result was garnered from a question asked in a regular customer survey in the period around

the analysis. The bank regularly surveys customers' perceptions of service and their experience at the branches. A further investigation showed that as time went on, the percentage of customers who reported that their most transacted branch was different from their home branch increased steadily from 36.9% in July 2001 to 43.6% in December 2002. These figures come from a self-report in the monthly customer survey and are most likely representative of the network as a whole even though only a small proportion of the banks' customers were surveyed in total over the eighteen month time period of the survey.

Due to problems in allocating all customers to branches in terms of their most transacted branch, which may be outside the sub-section of the network under consideration, the total number of customers was significantly different depending on whether you took customers by where their account was or where they transacted the most. This change in the total number of customers was of the order of 33% of all customers. This finding in itself lends credence to the earlier discussion about who is a customer of the branch. Changing the customer numbers changes the solution space of the DEA model significantly and therefore a true comparison between the two conceptualisations of the branch could not be clearly observed. As a solution, the number of customers was re-weighted in each case so that the total number of customers in the network was the same across both models.

Two DEA models were run: one using number of customers allocated according to where they hold their account (relational model) and the other according to where they transact the most (transactional model). The results changed significantly for many of the branches. The Spearman rank correlation coefficient between the two sets of efficiency scores was not significant, but the branches changed efficiency significantly under the two methods of analysis. Table 3 shows the distribution of efficiency scores. An efficient unit is one that is on

the frontier of best practice. The relational model had 63 (27%) of units efficient versus 72 (31%) when the branch network was modelled with the customer as a transactor.

Score	*Relational*	*Transactional*
100%	63	72
95-99%	19	32
90-94%	30	28
85-89%	42	27
80-85%	27	31
75-80%	29	24
70-75%	14	11
Under 70%	8	7
	232	232

Table 3: Distribution of efficiency scores in both models.

Of the 232 branches in this study, only 46 (20%) of branches were in the same efficiency band across both models. A further 59 (25%) branches changed efficiency by more than three bands (i.e. a change of more than 15% in efficiency). 103 branches had an average change in efficiency of over 10% between the conceptualisation as relationship and as transactional. The maximum change in efficiency found across the network was over 36%, and 5% of the network changed by more than five efficiency bands. On a more general note over the entire network, over 90% of the network experienced a change in efficiency with 15% of the network experiencing an absolute change of 20% or more in their efficiency score. This is a significant change and has important implications for resource allocation across the network. It is interesting to note also that only 23 branches remained efficient under both conceptualisations. The choice of conceptualisation therefore has a significant effect on the perceived efficiency of the branch.

Managerial Implications

The results of the analysis have demonstrated that there are significant differences in the efficiency scores between the two conceptualisations of the customer tested. These

efficiency changes can translate into differences in the resources allocated to the branches. It is clear that the simultaneity of transactions and relationship marketing (Fruchter and Sigue, 2005) has had an impact on performance with some branches focusing on relationships and the others on transactions. This hybrid approach (Coviello et al., 2002) is difficult to maintain and causes problems for the branch managers (Carson et al., 2004, Walsh et al., 2004). It has important implications for branch staff who on one hand are encouraged to build relationships with customers, and on the other encourage customers to use technology for lower-value (to the branch) transactions.

From the transactional marketing viewpoint a branch with a low efficiency score may be allocated more resources to boost local customer acquisition efforts and service customers more effectively. Conversely branches with higher relationship efficiency scores may be allocated more resources in order to further develop their sales effort to customers whom they have relationships with. A transactionally efficient branch that generates a lot of transactions from a low customer account base may be seen as a prime candidate for the extension of a relationship marketing programme with the purpose of building relationships with those who transact at that branch. This may even be the case when the prime focus of the branch is on transactions and its score under relationship efficiency is poor. As a result, a branch that is good at what it does (transactions) is being 'rewarded' by being given more resources to do what it is not good at (relationships). The end point is that a formerly efficient branch is utilizing more resources to deliver a poorer level of service to its customers. The importance of considering both types of customers in efficiency measurement has important ramifications for the strategic orientation of the branch towards its customers.

Analysis of the efficiency scores along with other information in the banks possession may lead to the development of regional policies, targeting of renovation efforts and in more extreme cases the removal of services from the branch. In this data set this is typified by the fact that the lowest scoring branch on the conceptualisation of the customer as having an account at the branch is efficient on a transactions basis, evidence perhaps of what O'Loughlin et al. (2004) sees as the weakening of relationships by banks as they try to migrate their customers to cheaper modes of transactions. This drastic change in efficiency is important as the branch has clearly emphasized transactions even though there are significant long term benefits to a relationship approach (Leverin and Liljander, 2006) and this may be at odds with the marketing strategy of the bank or its dual focus on transactions and relationships (Carson et al., 2004, Walsh et al., 2004).

Banks in using this, and other performance measurement techniques, should be concerned not just with the selection of models and inputs and outputs, but should be focusing on the different ways of interpreting the data that is to hand. It is clear that both types of customers, albeit artificially separated in this paper for modelling purposes, are real customers of the branch and branches may focus on one group to the detriment of the other. While this level of specialisation is occasionally justifiable (private banking versus foreign exchange bureaux), it is not a panacea for all branches in a network. As a result, taking different perspectives will improve the decision making capability of the bank in relation to not just local marketing resources, but also the orientation of the branch towards its customer base. The impetus then must be to desist from analysing the data that is easily available (the number of accounts in a branch) and take a more holistic view of the operations. While 'share of wallet' modelling is now commonplace in bank networks, the same level of rigor needs to

be applied to the modelling of customer numbers and the implications of different types of customer profiles for branch management.

Limitations, Conclusions and Directions for Future Research

While this study used a single methodology to measure efficiency in a sub-section of a single network in the UK, it facilitated interesting insights into how the conceptualisation of the customer can affect efficiency scores and in turn resource allocation decisions within a network. The DEA methodology has been criticised for being deterministic and being over reliant on extreme points in the generation of the frontier, however it does identify a set of best practice units to aid in performance improvement. These branches can be used as exemplars for training interventions at branch, or indeed bank, level to share practices, procedures and routines across the network.

While the need for both transaction oriented and relationship marketing is undiminished (Coviello et al., 2002, Fruchter and Sigue, 2005), this study shows that both have a key part to play in the future development of the branch. Moreover the models here have highlighted to management a problem that is common across many industries and not just retail banking: the difficulty of getting a single view of performance. The perspective depicted in this paper proffers an alternative to the traditional financial and operating ratio based approaches that are prevalent in the industry, and also provide a method of distinguishing between different conceptualisations of 'good' performance.

While it is commonplace for analysis of customers who have accounts at the bank to be conducted there is a lacuna of studies which deals with the issues of transactors as customers and their special needs. Why do they not open accounts at that particular branch or bank?

Are they even account holders at that bank? It is clear from the results that these transactors are a significant number of customers for many branches and use branch resources in terms of space, staff and technology. Their inclusion in modelling bank branches is essential to avoid a myopic view of the resource allocation model for bank branches not just in terms of marketing resources but also in terms of human and other financial resources. This suggests that a best practice approach might in fact be to use three models, two including both sets of customers to explore the relational and transactional perspectives and a third using the totality of customers using the branch. This is also important for the growing literature on internet banking behaviour (Calisir and Gummussoy, 2008, Durkin et al., 2008) and the integration of the operations and marketing functions (Rhee and Mehra, 2006) in financial services.

Future research is needed to trace the effects of the results of the efficiency studies in relation specifically to the allocation of local marketing resources to branches. This is particularly important in a turbulent financial environment and in an industry like retail banking that is continually exposed to waves of merger and acquisition activity, not just domestically but also internationally. The current research used a total measure of customers in the model. Customers behave differently depending on their personal financial circumstances and a deeper investigation of the mix of customers that a branch serves may prove useful in differentiating between the relational and transactional focus of the branch. Clarity is also required in relation to the role of the branch, and by proxy that of the branch manager, considering the changes in the financial services sector.

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