Responding to Customer Demand: Investigating Customer Agility of Financial Institutions

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Abstract

In turbulent environments firms have to constantly adapt their business to the changing environment to achieve profitability. Identifying changing customer demand and responding to it through the introduction of new products and services is an important capability of a firm. In this regard, the concept of customer agility has been discussed in literature as the capability of a firm to sense and respond to customer-based opportunities. In this study, we investigate this ability of financial institutions and its effect on the firms’ performance. Therefore, we analyze the reaction of financial institutions on different banking trends in four countries based on Google Trends and financial data. The results show that financial institutions that are able to sense changing customer demand and quickly provide new services to its customers gain higher profits. Hence, information about customer needs should be monitored continuously by firms to establish competitive advantage.

Keywords

Business Agility, Customer Demand, Responsiveness, GoogleTrends.

Introduction

More than other industries, the financial industry relies heavily on information technology (IT) to provide their services (Gopalan et al. 2012). According to McKinsey, the average bank spending for IT ranges between 4.7 percent and 9.4 percent of operating income (Gopalan et al. 2012), which is significantly higher than in other sectors. Over 30 percent of these expenditures go into the development of new applications (Mai 2012). IT is a valuable asset and constant renewal of IT is an essential part of the modern banking business model. This is particularly important as IT can increase the business agility of a company to react quickly in changing environments (Overby et al. 2006). Thus, IT capabilities in the financial service industry has been proven to be an important factor for achieving competitive advantage (Lin 2007). A study of the British banking sector, concludes that the increase of IT is the main disruptive factor in the retail banking market (Consoli 2005). First movers in technological change, for example Barclays in the ATM technology, were able to generate competitive advantages (Consoli 2005). Similarly, an analysis of the Taiwanese financial sector has shown that IT has a substantial positive impact on adoption of service innovation (Chen and Tsou 2006). In conclusion, IT can support these capabilities as an enabling platform for the difficult tasks enterprises have to cope with (Overby et al. 2006).

The evolution from standardized long-range mass production to short-lived customizable services (Goldman et al. 1995), is not just a financial sector phenomena. Companies have to be able to respond to changes in their business environment, in a more and more dynamic way (Goldman et al. 1995). This ability is known as business agility, which is more precisely, the capability of a company to sense environmental change and respond rapidly to it (Overby et al. 2006). Change can be triggered by different sources like competitors, startups, suppliers, regulators or customers. Startups and competitor innovation can for example disrupt the market structure requiring companies to continuously keep them under
The capability of a company to sense and respond to customer-based opportunities has been recognized by prior research as one of the key capabilities a company has to obtain (Roberts and Grover 2012b), to survive in turbulent market environments (Dove 2002; Goldman et al. 1995; Sambamurthy et al. 2003; Teece 2007).

The financial sector serve as an insightful example for the research of turbulent market environments (Wolf et al. 2009), especially as it recently had its worst period since the great depression (Beltratti and Stulz 2012). Because of the characteristics of the financial service sector, this study empirically investigates the proficiency of financial institutions to respond to change in customer demand. Therefore, a new method to measure customer agility utilizing the functionalities of Google Trends is presented. In the last years, Google Trends has started to gain recognition in research as a promising indicator for many different kinds of research topics. Studies have been carried out, which have proven the use of search query data valuable in disease epidemics research (Ginsberg et al. 2009), as key economic indicator (Choi and Varian 2012; Vosen and Schmidt 2011) and for the identification of trends in information systems (Buyya et al. 2008; Rech 2007). For this matter, we identified different cases of change in customer demand throughout four countries and evaluated the response speed of major banks. Based on this, we tested whether the responsiveness of the banks has a positive impact on enterprise profitability. Hence we are interested in the question, whether financial institutions with higher customer agility are able to gain sustainable higher profits. With this study, we contribute to the literature on business agility by developing a new method to measure responsiveness of companies based on search engine data.

The paper is divided into five sections. First, the concept of customer agility with emphasis on the financial sector is presented. In the third section, the empirical analysis is described and the results are presented. Finally, the results are discussed and implications of this paper stated.

**Customer Agility**

Business Agility, the overriding concept of customer agility, describes a company’s ability to perform successfully in spite of changes in the environment it is operating in (Goldman et al. 1995). To achieve profitability, companies have to be capable of sensing change within their environment and to quickly respond in an adequate manner (Overby et al. 2006). The degree of agility of an enterprise depends on the alignment of sensing and responding capabilities (Overby et al. 2006). A company with a high level of alignment senses just the opportunities and threats it can efficiently react to (Overby et al. 2006). Research on business agility in the field of information system has focused on the sensing, responding aspects and the role of information systems as an enabling platform (Overby et al. 2006). IT gives companies digital options to enhance their processes and knowledge in terms of reach and richness (Sambamurthy et al. 2003). Knowledge reach and richness affect the sensing capabilities of an enterprise while the impact of IT on process reach and richness influences the ability to respond to change (Overby et al. 2006). There are different subtypes of business agility, for example, operational agility, partnering agility, and customer agility.

Customer agility is the capability of a company to sense and respond to customer-based opportunities (Roberts and Grover 2012b). Most research of business agility acknowledged a major impact of customer agility on sustained competitive advantage. Goldman et al. (1995) claim that companies have to be very sensitive about losing their customers to be able to survive in markets of rapid change (Goldman et al. 1995). Therefore, they have to relentlessly improve their product and add services to achieve customer enrichment. The need of an organization to identify and manage customer needs is investigated in the marketing domain under the term customer orientation (Han et al. 1998). Customer orientation, as a core component of market orientation, includes the ability of a company to anticipate the change of consumer needs over time (Narver and Slater 1990). Changing customer demand is a disruptive factor in any business environment (Dove 2002; Goldman et al. 1995; Sambamurthy et al. 2003; Teece 2007). Failure to adapt to changing customer needs can harm companies’ success significantly. Hence, companies should understand themselves as solution providers which focus on customer needs to provide the demanded products and services (Goldman et al. 1995).

Customer agility can serve as an innovation source (Sambamurthy et al. 2003) and companies have to continuously monitor changing customer demands (Teece 2007). Thus, enterprises have to possess the
ability to integrate their customers into innovation processes as information sources, collaborators and product testers (Sambamurthy et al. 2003). However, customers do not necessarily express to companies which kind of services they are thinking of. Hence, agile companies have to be able to identify even hidden demands of their customers (Teece 2007). This is very important as customers may quickly turn their back to companies (Dove 2002) if competitors pay more attention to customer needs or identify and address those needs faster with corresponding offers. Dove (2002) describes customers as opportunistic and whenever there is an innovative product or service provided by a competitor that fulfils their needs, they will take the opportunity. Hence, companies have to dedicate themselves to respond to customer demand before their competitors do (Dove 2002).

Research has shown the great importance companies’ customer agility on their performance (Roberts and Grover 2012a). Information technology can have a positive effect on this relationship in the way that sensing and responding capabilities can be supported (Roberts and Grover 2012b). These findings are consistent with the general view that firms which possess IT capabilities achieve higher profitability ratios (Bharadwaj 2000). However, it is important how the IT infrastructure is embed into the organization. Information systems can provide an infrastructure for customer collaboration and opinion (Sambamurthy et al. 2003), improve knowledge about customer needs (McGaughey 1999), increase customer satisfaction (Mithas et al. 2005) and create switching costs for customers and therefore connect customers stronger to the company (Piccoli and Ives 2005). Technologies that build and enhance customer communication gives a company opportunities to integrate the customer voice into innovation processes (Sambamurthy et al. 2003).

**Agility in the Financial Sector**

The financial crisis of 2007-2009 has served as an example of turbulent conditions in which companies have to dispose over a high degree of agility to meet regulatory requirements, react to changing market conditions and manage the needs of their customers. Agarwal et al. (2009) demanded a more significant role for strategic management theory as a tool to explain and cope with the financial crisis as macro-economic theory has proven to be incompatible with the outcomes of such an economic meltdown (Agarwal et al. 2009). Simultaneously they argue that there has to be a new management research framework that addresses “deep uncertainty” as experienced in the recent economic downturn. While they see the business agility theory as a useful approach to cope with continuous change, they don’t perceive it as sufficient for once-in-a-decade events like the recent financial crisis (Agarwal et al. 2009). However, the key elements of the business agility concept, in particular the sensing and responding frameworks (Overby et al. 2006; Teece 2007) seem well-suited to explain why some companies performed better than others during the financial crisis.

Holland (2010) states that banks which failed in the crisis had, in some cases, a high level of sensing capabilities like learning and knowledge management. Yet those financial institutions weren’t able to integrate these abilities into their top management decisions. A possible explanation for that might be a lack of alignment between the sensing and responding capabilities (Overby et al. 2006), as well as the inexistence of an efficient asset orchestration processes (Overby et al. 2006; Teece 2007). The essence of the agility mind-set is that companies possess a degree of ability to perform in turbulent environments based on their competence to sense and respond to change (Overby et al. 2006; Teece 2007). Customers are one of the main sources for this change (Sambamurthy et al. 2003). In industries in which technology plays an important role, companies succeed by efficiently managing the technological evolution (Teece 2007). Therefore, the financial industry is a good example for a sector which is undergoing continuous technological change (Jayawardhana and Foley 2000).

**Empirical Study**

To empirically investigate the business agility concept in the financial sector with focus on customer agility, this study uses different trends in customer demand (i.e. Mobile Banking, Contactless Payment) and evaluates how quickly banks responded to them to measure the responsiveness of financial institutions. Furthermore, the impact of the institutions’ aggregated responsiveness on their profitability is tested. This study presents a first analysis of our data.
Research Methodology

In order to evaluate financial institutions’ ability to quickly respond to trends in customer demand, we developed a three-step approach depicted in Figure 1. First, we used websites of banks and analyzed which products and services were provided between 2006 and 2012 to identify trends. This was done to get a broad overview over the possibly trends to could have emerged in that period. Next, to ensure that the service is actually a trend and not an established product such as credit cards, the Google search volume at the beginning of the observation period (January 2006) within the respective country the trend has been observed had to be below 10% of the peak levels to be considered in this study. To analyze the search volume, we used the GoogleTrends service. To further ensure the relevance of the identified trends, we used Google’s AdWords Keyword tool to observe the absolute number of search queries of the last twelve months. To confirm the significance of a trend in customer demand, a minimum of one thousand local monthly searches had to be exceeded by each keyword. Finally, all banks in our sample have to offer the services which guarantee that the services are not company specific and the provision of the service by all banks shows the relevance of the service.

In the second step, we used Google search results to observe how quickly banks meet their customer needs with corresponding offers. However, there are some obstacles which have to be addressed. Companies regularly change their websites or URLs they provide services on. Fortunately, the Google search time function allows querying for results that were displayed before the current webpage was online. This gives us the ability to investigate pages that could be found in the past for certain search queries. This utility makes it possible to determine the first time a service is offered by an enterprise, even if this company changed its websites and URLs throughout the years. To confirm that the results of this method are valid, we used the Wayback Machine which archived more than 240 billion web pages since 1996 (Internet Archive 2001). Thereby, we can look up the content of the websites on a specific time to make sure that this websites actually provided information about a certain service.

In the final step, we calculated the responsiveness of a bank based on the Google Trends data. In Figure 2, we depicted the search volume regarding mobile banking in the UK. The graph shows the search volume between 2006 and 2012. The grey area is the amount of search volume that the bank did not manage to cover. The accrued search volume after the bank introduced an corresponding offer is black-colored.

Figure 1. Three-Step Approach for the Determination of Bank Responsiveness

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responsiveness measure is subsequently calculated by dividing the amount of search volume after the bank started to offer the service by the total search volume in the observation period. Thus, the demand responsiveness-indicator measures what percentage of customer demand is covered by corresponding bank offers. We gathered the search volume for each trend in every country with a single query for each trend using GoogleTrends. It is important to mention that Google Trends does not measure the total amount of search queries of a keyword but the amount of times the term has been searched divided by the number of total searches on Google in a selected region (Choi and Varian 2012). However, this aspect of Google Trends is, at least for this study, more of a blessing than a curse, because by being proportionate to total search volume, Google Trends eliminates the concern of a total search growth bias.

![Figure 2. Search Volume of Mobile Banking in the United Kingdom](image)

**Sample**

Previous research suggests that Google Trends is providing better results in English (Rech 2007), thus our study focused on banks in the United States, Canada, United Kingdom, and Australia. We started by selecting the four largest banks of each country. The banks were picked according to the ranking by asset size. As the financial database of Bankscope, on which the financial performance measure of this study is based, is incomplete for the third and fourth largest banks of Canada, the fifth largest bank is part of the sample instead. Hence, three of the five main banks of Canada are represented in the sample of this study. Also not part of the sample is the National Australia Bank. Due to their website management it is not possible to detect the time the observed offers were published. We focus on large banks because they are supposed to provide service for all major trends in the financial industry sector. As result, the sample of this study contains 14 banks in four different countries.

The identified trends can be categorized into technology-, market- and regulatory-driven trends. Technology-driven trends are mobile banking, which is in demand in every country, contactless payment, and online invoicing. The market-driven trends are low fee credit card, startup account, student account, and bank foreclosures listings. A demanded service from customers in the US has been “bank foreclosures listings” which has seen a rapid move during the subprime crisis from 2007 to 2009. Another market-driven trend is start-up-accounts. Start-ups are traditionally funded by venture capital. However, the
British banks understood that these early-stage companies still need business accounts which are adapted to their needs. A similar trend, based on a specific target group, has also been found in Australia. While in other countries, like the United States, student accounts are a well-established service, major interest in Australia began in 2008. Regulatory-driven trends (registered disability savings plans and tax-free savings accounts) are limited to Canada. Tax-free savings accounts (TFSA) have been introduced in 2009, to give Canadians the possibility to save money without having to pay taxes. The selected financial institutions and trends for each country are presented in Table 1.

<table>
<thead>
<tr>
<th>Financial Institutions</th>
<th>Australia</th>
<th>Canada</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANZ</td>
<td>CIBC</td>
<td>Barclays</td>
<td>Bank of America</td>
<td></td>
</tr>
<tr>
<td>CBA</td>
<td>RBC</td>
<td>HSBC</td>
<td>Citi</td>
<td></td>
</tr>
<tr>
<td>Westpac</td>
<td>TD Bank</td>
<td>LLOYDS</td>
<td>JP Morgan Chase</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>RBS</td>
<td>Wells Fargo</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trends</th>
<th>Australia</th>
<th>Canada</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low fee credit card</td>
<td>Mobile banking</td>
<td>Contactless payment</td>
<td>Bank foreclosures listings</td>
<td></td>
</tr>
<tr>
<td>Mobile banking</td>
<td>Registered disability savings plans</td>
<td>Mobile banking</td>
<td>Mobile banking</td>
<td></td>
</tr>
<tr>
<td>Student account</td>
<td>Tax-free savings accounts</td>
<td>Startup account</td>
<td>Online Invoicing</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Selected Financial Institutions and Trends in the Financial Sector

**Variable Operationalization**

Customer agility of the financial institutions is operationalized based on the responsiveness measure described in the methodology section which is used as independent variable. To calculate this indicator, the aggregated search volume after starting a corresponding offer is divided by the total search volume regarding an emerging trend, to measure how much of the customer demand the bank was able to cover with its offering. The dependent variable of our study is the average return on assets (RoA) of the financial institutions over the period of observation (2006-2012). RoA is the most commonly used profitability indicator in the financial sector (Dehning and Stratopoulos 2003). It measures the ability of a company to generate income, by use of its assets, regardless of how these assets are financed. That makes RoA the appropriate measure for overall financial performance (Dehning and Stratopoulos 2003). Thus, return on assets has been the profitability indicator for studies of different kinds of factors as, for example, corporate reputation (Roberts and Dowling 2002) and IT capability (Bharadwaj 2000).

Moreover, we included two control variables. First, we included a variable to control for the trading income of the financial institutions. Financial institutions engage in proprietary trading which has an effect on RoA. Trading income is the most volatile banking revenue source and is subject to financial market volatility (Stiroh 2004). Therefore, average trading income from 2006 to 2012 is used as control variable in this study. The other control variable, first mover ability, is based on management theory (Kerin et al. 1992). There is strong evidence, that being the first company offering a service leads to higher profitability and market share (Kerin et al. 1992). However, there is a call for further empirical investigation of the first mover advantage in relation to different sources of change (Suarez and Lanzolla 2007). Addressing this call, this study includes a first-mover variable into the analysis. This factor ranges from zero, the bank was in none of the three trends the first-mover, to three, the bank was in all three cases the first-mover.

**Analysis**

To ensure no violation of homoscedasticity, the final sample of the analysis had to be reduced from 14 to 13 banks. JP Morgan, which has been taken out of the sample, has a RoA-responsiveness ratio which differs significantly from the rest of the financial institutions. Specifically, JP Morgan has the second highest return on assets and a low responsiveness rate of 0.59, compared to the average of 0.74. One
possible explanation therefore could be the trading income of JP Morgan. Within the observation period (2006 to 2012), JP Morgan had the highest average trading income of all 14 banks. The residual 13 banks have an average RoA of 0.62 and an average responsiveness of 0.74 which ranges from 0.44 (Royal Bank of Scotland) to 0.98 (Royal Bank of Canada). Table 2 provides the pairwise correlations, means and standard deviations. We performed a linear regression analysis to calculate the relationship between the banks’ demand responsiveness and profitability.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Average RoA (in %)</th>
<th>Responsiveness</th>
<th>First Mover</th>
<th>Trading Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average RoA</td>
<td>0.62</td>
<td>0.40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>0.74</td>
<td>0.17</td>
<td>0.81***</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>First Mover</td>
<td>0.92</td>
<td>1.04</td>
<td>0.47</td>
<td>0.56*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Trading Income</td>
<td>1128.54</td>
<td>1502.81</td>
<td>-0.52*</td>
<td>-0.41</td>
<td>-0.03</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2. Means, Standard Deviations and Pairwise Correlations of Variables

First, the relationship of return on assets and the developed responsiveness factor is tested without control variables as a univariate model. Figure 2 shows the profitability of the banks in relation to their responsiveness by country. The figure and the corresponding univariate model depicted in Table 3 reveal a strong linear relation between a bank’s responsiveness and its average RoA.

![Figure 2. Responsiveness and Return on Assets of Banks by Country](image-url)
To check the validity of the analysis, a multivariate model with the control variables were tested. Thereby, we performed a regression only with control variables and a full-model with the responsiveness measure to show how much variance is explained by the independent variable. Table 3 presents the results of all three regression analyses. The simple ordinary least square analysis of the calculated aggregated demand responsiveness and average return on assets between 2006 and 2012 has resulted in a significant positive impact of demand responsiveness on average return on assets. 37% of the variance of average return on assets is explained by regression model including only the control variables. Adding the responsiveness measure in the full-model increases the adjusted R² by 0.22 and shows a significant influence of the responsiveness variable (p-value < 0.05) on the banks’ profitability. Hence, the null hypothesis of no relationship between demand responsiveness and return on assets can be rejected. Previous research used median RoA data in addition to average RoA as the median is more robust against fluctuations in accounting data (Bharadwaj 2000). Therefore, the responsiveness-profitability relationship is also tested with the median RoA as dependent variable. The outcome is consistent with the first findings, a positive relationship between median RoA and responsiveness, but with a lower significance (p-Value = 0.049) and a lower coefficient (0.012). Nevertheless, the results of this analysis support the assumption of a positive impact of customer demand responsiveness on bank profitability.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Univariate-Model</th>
<th>Multivariate-Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Controls</td>
<td>Full-Model</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.82***</td>
<td>0.61***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.49</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>1.94***</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.55***</td>
</tr>
<tr>
<td>First Mover</td>
<td>-</td>
<td>0.18*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.04</td>
</tr>
<tr>
<td>Trading Income</td>
<td>-</td>
<td>-0.01*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.01</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.61</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.59</td>
</tr>
</tbody>
</table>

Table 3. Regression Results

Discussion of the results

The results of our analysis are consistent with the concepts of business agility (Sambamurthy et al. 2003) that the ability to respond rapidly to change in turbulent environments is crucial for sustained competitive advantage (Teece 2007). Banks with entrepreneurial capabilities (Goldman et al. 1995; Sambamurthy et al. 2003; Teece 2007) can quickly establish new services to respond to customer demand. The research also shows that some banks possess strategic foresight (Sambamurthy et al. 2003), which is the ability to anticipate demand before it arises. The anticipation of mobile banking and low fee credit card customer requests of the Commonwealth Bank of Australia can serve as an example for this ability. The results are also in line with other research that has found evidence for an impact of customer agility on company performance (Roberts and Grover 2012a) as well as research which grants an important role to customer demand awareness (Goldman et al. 1995). Companies which possess customer agility by using customers as an innovation source and continuously monitor changing customer demands are able to outperform their competitors (Sambamurthy et al. 2003; Teece 2007). Our study provides evidence that customer orientation plays a role even in times of very high market turbulence. Prior research has shown that banks have to primarily cope with privacy concerns and raise awareness to increase the usage of online banking (Sathye 1999). In more recent studies, perceived risk of online banking has resulted in no significant impact on the likelihood that customers use internet banking services (Lee et al. 2011). As this foundation
has been laid and all the major banks have implemented online services, the focus of banks has to shift. They shouldn’t concentrate on how to get more clients on the cheaper online banking channel. Instead, banks should put their efforts into continuous delivery of innovative services that their customers request. Indeed, the sample of this research has shown that all the main banks meet sooner or later the demand of their clients for new products and services. Nevertheless, because of the declined switching costs of banking, even a short delay of demanded products, could have severe consequences. The high amount of search queries for the different new banking products shows that opportunistic customers (Dove 2002) are persistently searching for innovation and products which address their needs.

The control variables which had been added to the regression resulted in no significant impact of the trading income and no significant impact of the first-mover variable on company performance. A closer look at the first-mover variable reveals some interesting insight. The result that the first-mover variable is not significant, cannot be explained through the correlation between the responsiveness factor and the first-mover variable (see Table 2), even though both variables rely on the same data and have a similar structure. One of the two banks which were the first mover in all three trends in a country, the Royal Bank of Canada, has also the highest responsiveness score. However, the two banks which were first-movers in one of the three trends show an even lower average RoA than the banks which were never able to provide new products as first. On the other hand, the four banks which were first in two or three cases have an average RoA of 0.933%. Thus, they were almost twice as much first mover as their competitors which have been first mover in none or in one of the trends first. The higher average return on assets of banks, which have addressed client needs before their competitors in more than one case, shows once more that competitive advantage depends on repeated superior responsiveness based on companies’ capabilities. A good example of a company possessing first-mover capabilities is Barclays. The bank started offering mobile banking services as well as contactless payment services a long time before its competitors did. In both cases Barclays had launched its products more than two years before the other banks while Lloyds and RBS came last. In fact, RBS started its contactless payment service not until April 2013. The outcome that Barclays is the first mover in both technological trends and correspondingly has the highest average RoA in the United Kingdom is consistent with the findings of Consoli (2005). Consoli states that Barclays started technological revolutions in Britain like the credit card and ATMs and was able to achieve sustained competitive advantage through this capability (Consoli 2005).

**Conclusion**

The objective of this study was to investigate the impact of the ability of a company to sense and respond to customer demand on its profitability. Based on a literature analysis, a new measurement method for customer agility is proposed, which combines Google Trends and Search data. This method allows it to measure the demand of customers for certain services and the speed with which companies respond to that demand. Therefore a responsiveness-factor is formalized which indicates the percentage of customer demand a bank has been able to cover through corresponding offers in a certain period. The following analysis showed that the profitability of banks is positively impacted by its responsiveness.

This study contributes to the research on business agility (Overby et al. 2006; Sambamurthy et al. 2003) by giving empirical insight to the response ability of companies. By linking the business agility measure with enterprise profitability it adds to other studies and supports the hypothesis of a positive impact of agility on company success (Wilden et al. 2013). Additionally, this research is contributing to the appliance of the business agility concept to the financial service sector (Pahlke et al. 2011). It also contributes to the research that utilized Google Trends (Buyya et al. 2008; Choi and Varian 2012; Ginsberg et al. 2009; Vosen and Schmidt 2011) for empirical analysis and in addition to that combines the Google Trend query data with Google Search result information. Practitioners can draw from the results, of our study that it is crucial for their enterprises to sense and quickly respond to changes (Overby et al. 2006) in the turbulent environments. Following the results of the empirical investigation, the ability to capture customer demand and to quickly offer the needed financial services increases the profitability of banking firms and may help to establish competitive advantage.

Our study is exposed to some limitations based on the use of search query data for different customer demand trends. As this represents a first analysis of our proposed method, our data sample is rather small and thus the variance in the observations is limited. However, we see a strong relation between a company’s success and its responsiveness to customers’ needs. We focused in our study on larger financial
institutions, because smaller banks are supposed to be more specialized and the selected institutions should have provided all the identified trends. The focus on the internet banking channel disregards the inherent importance of traditional branch banking. Especially older clients are reluctant to use online services. Therefore, concentration on the internet business to explain bank profitability could create a distorted image of bank agility. The results also rely on the reliability and consistency of Google’s search query databases and Google Trends only provide relative search volumes. Additionally, the different types of customer trends may affect the comparability of the results. This is due to the lack of similar trends in the different countries other than mobile banking. Future research can use the method proposed in this study to further explore the evolution of supply and demand of services. As more and more consumer-provider contact is made online, this method is increasingly valuable for the analysis of the market structure and evolution. Another opportunity for future studies is to categorize the trends into change source related groups. With a larger set of trends, different types of agility which are suggested by prior research (e.g., Pahlke et al. 2011) could be tested. For example, partner agility, which is the ability of a company to connect and cooperate with strategic partners (Sambamurthy et al. 2003), can be explored by evaluating the capability of a company to respond to trends which involve strategic partnerships.

References


