

“Antecedents of the service quality for housing loan customers of Indian banks”

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ARTICLE INFO

Shankar Babu Mani and Viswanathan Ekambaram (2021). Antecedents of the service quality for housing loan customers of Indian banks. *Banks and Bank Systems*, 16(1), 195-204. doi:[10.21511/bbs.16\(1\).2021.17](https://doi.org/10.21511/bbs.16(1).2021.17)

DOI

[http://dx.doi.org/10.21511/bbs.16\(1\).2021.17](http://dx.doi.org/10.21511/bbs.16(1).2021.17)

RELEASED ON

Monday, 05 April 2021

RECEIVED ON

Sunday, 30 August 2020

ACCEPTED ON

Monday, 18 January 2021

LICENSE



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JOURNAL

"Banks and Bank Systems"

ISSN PRINT

1816-7403

ISSN ONLINE

1991-7074

PUBLISHER

LLC “Consulting Publishing Company “Business Perspectives”

FOUNDER

LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

50



NUMBER OF FIGURES

1



NUMBER OF TABLES

1

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BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine
www.businessperspectives.org

Received on: 30th of August, 2020

Accepted on: 18th of January, 2021

Published on: 5th of April, 2021

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Conflict of interest statement:

Author(s) reported no conflict of interest

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ANTECEDENTS OF THE SERVICE QUALITY FOR HOUSING LOAN CUSTOMERS OF INDIAN BANKS

Abstract

The purpose of this paper is to explore the influence of the cost of borrowing, processing time and documentation on the service quality of banking institutions in India that sanction housing loans. A research framework was designed to consider the independent variables influencing service quality by unearthing research gaps in the extant literature on housing loans. All research gaps were transformed into a questionnaire, to which 535 useful responses were received. A five-point Likert scale was used, and a structural equation model was formulated using ADANCO 2.0.1 – all hypotheses were tested with ADANCO. The findings clearly indicate the relevance of the service quality in banking sectors in India. There is a significant relationship between the three independent variables (cost of borrowing, processing time and documentation) and service quality. The outcome of banking service quality is measured through initial personal contact, online banking services, the humanitarian approach, provision of information for services, promise of service delivery and field verification, with all these measures having a very strong impact. This study is restricted to India only, but could be extended to other developing countries in South Asia in the future. This study could also be extended to cover other types of banking loans offered by banking institutions in India. The paper concludes that it is time for banking institutions to take action to sanction housing loans with a view to introducing the instant sanctioning of bank loans that come with real-time access, without resorting to bureaucratic policies and procedures for housing loan customers.

Keywords

fixed rate mortgage, bank lending, processing time, foreclosure, adjustable-rate mortgage, documentation, corruptive practices, fixed term

JEL Classification G21, D14

INTRODUCTION

Customers consider bank service quality to be the most important element when selecting mortgage providers and establishing long-term relationships with them. The other three elements are product attributes, access, and communication (Lymperopoulos et al., 2006). Panagariya and More (2014) state that post-reform accelerated growth has worked as a strong stimulus to reduce poverty in India for all economic, social, and religious groups. Ghosh et al. (2015) identify the impact of financial sector liberalization on the availability of credit in both public and private banks. Bhanumurthy and Singh (2013) highlight the trends in and determinants of economic growth in India. The trends revealed by these three articles indicate that financial institutions sanctioning home loans are liberalizing various rules and procedures applicable to the granting of house loans to customers.

Service quality plays an important role in determining the choice and selection of a mortgage provider. Cronin and Taylor (1992) investigate the conceptualization and measurement of service quality and relationships between service quality, consumer satisfaction, and purchase intentions. Service quality is an antecedent of customer satisfac-

tion, which, in turn, has a significant effect on purchase intentions. Parasuraman et al. (1985) examine the quality of intangible goods as measured by marketing experts, since the quality of services is largely undefined and not researched. Kaura and Datta (2012) stress the importance of service delivery as a sole variable to improve customer relationships; this study is further supplemented by Kaura (2013), who states that service quality in banks depends on employee behavior, tangibility, information technology and the dimensions of service convenience such as decision, access, transaction, benefit and post-benefit convenience. The scope of the study is geographically confined to India. Customers residing in all metropolitan cities in India are potential respondents to the questionnaire, which is administered on a sample basis. All the customers selected through the sampling process have taken out home equity loans, existing home loans, home improvement loans, home purchase loans and land purchase loans bought under the housing loans scheme.

1. LITERATURE REVIEW

The literature review is aimed at determining the fundamental elements of the research problem and the progress made on the influencing factors (i.e., the independent variables), namely, the cost of borrowing, processing time and required documentation. These independent variables have an impact on a dependent variable – Service Quality.

The cost of borrowing includes application fees, processing fees and interest on housing loans, penalties for default, foreclosure charges and any other incidental costs incurred during the duration of a housing loan. Meador (1982) notes that the cost of borrowing differs from region to region due to local regulations, different kinds of mortgage available, loan-to-value ratios and foreclosure conditions. This research study focuses on the cost of borrowing as an important determinant of customer satisfaction. The application fee is the fee payable when submitting a home loan application. Application fees are linked to the supply of and demand for housing loans. On the one hand, if the demand for housing loans is more than the supply, the application fee is high, and vice versa. Even big banks hike their application fees when the demand for housing loans soars and, correspondingly, the rate of application rejections is high (Daniels, 2009). On the other hand, however, there is a trend of abandoning application fees as a way to attract more loans into the market. There are many cases in foreign countries where application fees have been scrapped in order to provide an opportunity for new borrowers to access loans (Martin, 2006). Estimating the valuation charges on home loan transactions is a delicate area that would benefit

from greater clarity. Different lending institutions impose different valuation charges for their own advantage. Unethical practices exist in many cases, depending upon the culture and characteristics of the lending institutions involved (Thomas, 2016). How much a home loan valuation fee depends on the valuation procedures; these, in turn, determine equilibrium home loan to charge a fair fee (Schwartz & Torous, 1992). Ward (2009) observes that the valuation fee depends on an observed value. A setup cost, as part of a valuation fee, increases in utility; it measures the discount on the maximum price levied when processing a home loan. Cooley (2005) states that processing fees are charged through different platforms. In addition to its own platform, an independent agency provides portals from which information about the various processing fees can be obtained. Lenders use processing fees or points to adjust both their yield and the borrower's annual loan amount (Eaton, 2005). There are two types of interest rates currently in vogue. Equated monthly instalments (EMIs) remain constant when they have a fixed rate of interest. Alternatively, fluctuating EMIs respond to market conditions, with floating interest rates. Many lending institutions give a borrower the option to choose between a fixed or floating interest rate, either at the commencement of the loan or during the life period of the loan. In practice, a fixed rate of interest is the preferred rate of interest by housing loan borrowers (Uberti et al., 2014). Dhillon et al. (1987) observed that all fixed-rate home loans are non-adjustable, with long-term maturities (i.e., 25 to 30 years). Foreclosure occurs when an extenuating circumstance happens. This includes the death of a spouse, illness, job transfer, injury resulting in disability and bankruptcy, and/or

job loss. Foreclosure is also resorted to whenever an alternative source of housing loans that attracts a lower rate of interest becomes available (Rodgers & McFarlin, 2017). Carr (2007) indicates that a foreclosure fee is required if the outstanding principal balance of the loan is adjusted or repaid; this is necessary to avoid a future foreclosure crisis. Modification occurs when there is an alteration, addition or amendment of the terms and conditions of existing housing loans. This is a permanent change with regards to payment terms, principal, interest rate and collateral security. An increase or decrease in the mortgage principal balance is more likely to result in a modification to a loan. All these processes are carried out with the stipulation on modification fee (Schmeiser & Gross, 2016). Late fees cause the subsequent monthly payment to be inadequate, generating a pyramiding of late fees (McNulty et al., 2019), and the lending institution is allowed to levy late fees on the unpaid amount (Chiang et al., 2016). Danis and Pennington-Cross (2005) observe that late fees occur over time, meaning that repaying the loan costs more over the long term. Lee and Hogarth (2000) note that home loan borrowers are asked to specify the terms and conditions of the home loan, particularly the various types of fees (including application fee, interest rate, monthly payment, insurance fee, and late payment fees). Bureaucratic processes exist in the home loan market, and there are many incidences of mortgage fraud in various countries. Borrowers submit false income details in the hope of attaining a larger housing loan, in turn encouraging corruptive practices among realtors, appraisers, and lending institutions. This has led to lending institutions sanctioning unqualified borrowers towards the higher limit of home loans available to them, through the administration of large commission fees (Der Hovanesian & Beucke, 2005). Murray (2018) notes that corruptive practices lead to abuses of government subsidies and home improvement schemes. Pfeiffer (2017) states that brokers are normally paid a commission for providing a buying and selling service. The price to be paid for the services rendered by the broker is called the brokerage. Normally, brokerage transactions are carried out through face-to-face interviews during which the terms and conditions of the brokerage contract are finalized (Conklin, 2017).

A method and apparatus for the closed-loop, automatic processing of a loan, including the completion of the application, underwriting, and transference of funds, includes the use of a programmed computer to interface with an applicant, obtain the information needed to process the loan, determine whether to approve the loan, effect electronic fund transfers to the applicant's deposit account and arrange for automatic withdrawals to repay the loan. Toscano (2002) defines the processing time as the time taken to process loan documents and instruments for the purpose of solicitation, verification, grant, extension, renewal, and sale of loans, whether secured or unsecured. In addition to the combination of law and technology, the processing time preserves the persistence, provenance, integrity, legality, utility, evidentiary admissibility, form, and content of loan documents, aiding a speedier approval of home loans. The starting point of the loan process is the initial processing of a home loan by a lending institution. This initial process considers the borrower's income, debts, ability to repay the loan periodically, willingness to repay, credit report and rental payment history. Since it is very difficult to standardize initial processing procedures, this is handled on a case-by-case basis. It is very important for lending institutions to examine the weakness of the borrower and to determine how to fill any weak gaps through any strength demonstrated by the borrower. This is necessary and in lending institutions' best interest of lending institutions. During the home loan application process, a lot of information needs to be collected, namely: Borrower's mailing address, Information on first- and second-lien home loan (if any), Any other borrowings, The specific property address on which loan is to be sanctioned, The duration of the loan, Original loan amount, Debt-to-income ratios, Credit report and credit score, Occupancy status of the mortgaged property, Borrower bankruptcy history (if any), Outstanding loan balance, Information relating to whether the loan has been modified or extended, Any defaults or foreclosure of previous loans, and Any other relevant information related to the borrower's needs. Tealdi et al. (2012) identify a method for automatically fulfilling the approval requirements such as Maintaining a multiplicity of registered service providers, receiving a home loan application that has one or more conditions to be fulfilled for the

home loan application to be approved, evaluating one or more conditions to determine one or more actions that should be taken to fulfil those conditions, Automatic approval when prescribed conditions are fulfilled. This step in the loan process is very important, as the applicant is fully aware of their commitments in the loan agreement. As soon as the home loan approval formalities are over, the loan agreement is transmitted to and from the applicant. In suitable cases, the delivery of the agreement to the home loan borrower is done by the borrower's agent. In a few instances, the applicant completes the requisite functions through computer access from a kiosk (Norris, 1999). There are three stages to the withdrawal of the loan amount, namely: the submission of the application form and documents, followed by the sanctioning and then by the disbursement, which is usually communicated through a home loan disbursement letter. Once a home loan sanction letter has been approved, the disbursement process will start. The disbursement of the loan amount takes place in one or more instalments, following any technical and/or legal property verification (e.g., the progress of construction or the readiness of the house). Documentation for a home loan includes the title to the property, tax returns, payslips or other proof of income, bank statements and other assets, credit history, photo ID, renting history and any other documents that are required by lenders from time to time. Mian and Sufi (2017) state that a good loan document is a representation of the true documentation, leading to correct conclusions on the nature of home loan credit supply expansion towards marginal borrowers. Davis (2013) highlights certain problems surrounding documentation in home loan applications, noting a recent rise in challenges to the enforcement of home loans through widespread documentation problems relating to the transfer of assets. He observes that reforms are possible but will require crucial improvements in the recording process of home loan documents. McQuiston (2018) places importance on the simplification, standardization, and rationalization of the loan application process. Advocating for an easy application process in terms of the documentation and forms required, he states that housing loan lenders have an opportunity to gain a greater share of loans if they provide simplified and user-friendly application forms. While

McQuiston supports the introduction of a simplified form, Bhutta et al. (2015) advise that lenders do away with conservative and traditional checks through complex application forms. An exemplary application process is possible only if it is simple and straightforward (Leyer et al., 2015). Lending institutions offer online platforms for their housing loan services in order to facilitate faster processing – starting from the enquiry for an application for a loan to closing the loan's account after the final loan instalments are paid (Leng et al., 2018). Furthermore, lending institutions provide technical assistance for the valuation of property, approval of building plans and monitoring different stages of the construction of the home – not only for the safety of the loan, but also for tendering benevolent advice on construction (Hartman, 2017). Ferguson (1999) stated that starting for technical assistance is from locating the infrastructure with other essential resources, such as people, machines, materials, methods, and money. The collection of documents involves getting information from various segments of the loan, which are broadly classified as the initial application stage, process and implementation stage, foreclosure stage and final closure. Each institution requires certain documents from borrowers, along with the imposition of other eligibility criteria (De Araujo et al., 2016). The various aspects of document collection have been elaborately dealt under paragraph 2.3.7. Anderson et al. (2003) recommended the use of portable smart cards for transactions at points of sale and ATMs. Brown (2016) analyzed the importance of educational qualifications for home loan borrowers. Educating borrowers on purchasing homes is effective in reducing default or foreclosure. These qualifications are added criteria for considering home loans. Educational qualifications help promote sustainable homeownership by influencing borrowers' information-seeking behavior and strategies for resolving defaults. After paying the final instalment of a home loan, the borrower receives a message stating that the property that was mortgaged is no longer owned by the lending institution. As proof of ownership, the mortgager releases all of the documents that prove that the loan has been paid in full. Anidiobu et al. (2018) stated that a loan document is a signed document that specifies a change in ownership of a property. The delivery of a loan document to the borrower

is an indication that the loan process is coming to an end – freeing the borrower from the home loan agreement. This is due to the full and final settlement of all instalments and other charges by the financial institutions. Craft (2015) advocates that the power of attorney is limited to authorizing the mortgage of the property, deposit of instalments, foreclosure of the loans and the final closure. Covenants, caveats, and preventive clauses are introduced to safeguard the interests of the homeowners (borrowers). The power of attorney should be automatically terminated as soon as the loan account is closed, and all documents are received.

Based on the research gap identified by the literature survey, the sequential research questions and problems can be constructed:

- a) Is the cost of borrowing compatible and commensurate with the extent of various services offered by lending institutions?
- b) Is the processing time (from initial enquiry to the approval of the home loan) in accordance with the promise made in the marketing materials, meeting the advertised quality of service quality?
- c) Does the practice of collecting all the required documentation (salary slips, income tax returns, bank statements and past financial history) affect service quality in relation to the swiftness of the loan?
- d) Can service quality be measured by swifter actions in terms of initial personal contact, online banking services, the humanitarian approach, the provision of information for services, promise of service delivery and field verification?

The research objectives are set with the aim of solving problems identified by research gaps in the extant literature: To ensure that the cost of borrowing is compatible and commensurate with the services rendered by lending institutions. To ensure the time between enquiry and approval of the home loan is in accordance with the promise made in the lending institution's marketing materials. To minimize the number of documents

required, facilitating the speedier approval of the loan and improving service quality. To measure the outcome of service quality in terms of initial personal contact, online banking services, the humanitarian approach, the provision of information for services, promise of service delivery and field verification.

2. RESEARCH METHODS

Since this study involves problem solving, its scope includes a literature review to find areas of research that have yet to be addressed, known as a research gap. Identification of research gaps in the main topic helps frame research questions. Furthermore, research objectives are set as solutions to each research question. Once research objectives are identified, the formulation of meaningful hypotheses can be framed. Both primary and secondary data are used. While the primary data is collected through the administration of question of instruments, the secondary data is collected from past literature, namely Proquest, Ebsco, Google scholars, etc. In this study, home loan borrowers are chosen as respondents to reflect a high level of knowledge and feedback on the service quality of lending institutions that grant home loans. Out of the total population of home loan customers, the questionnaire was sent to about 1,500 respondents. The responses received amounted to 592 (39%). Out of the 592 responses received, only 535 were deemed usable. Hence, the data analysis is carried out based on the results that were obtained from 535 usable responses.

3. RESULTS AND DISCUSSION

ADANCO (Advanced Analysis of Composites) is a modern software program that is completely different from traditional statistical packages. It is a software for modeling variance-based equations. This new software aims to achieve reliable statistical results. In this section, the focus is centered on the justification for using ADANCO 2.0.1 to analyze and interpret the data. The use of the Likert measurement scale and other statistical findings are also presented in figures and tables. The structural equation model with a path analysis is presented in Figure 1.

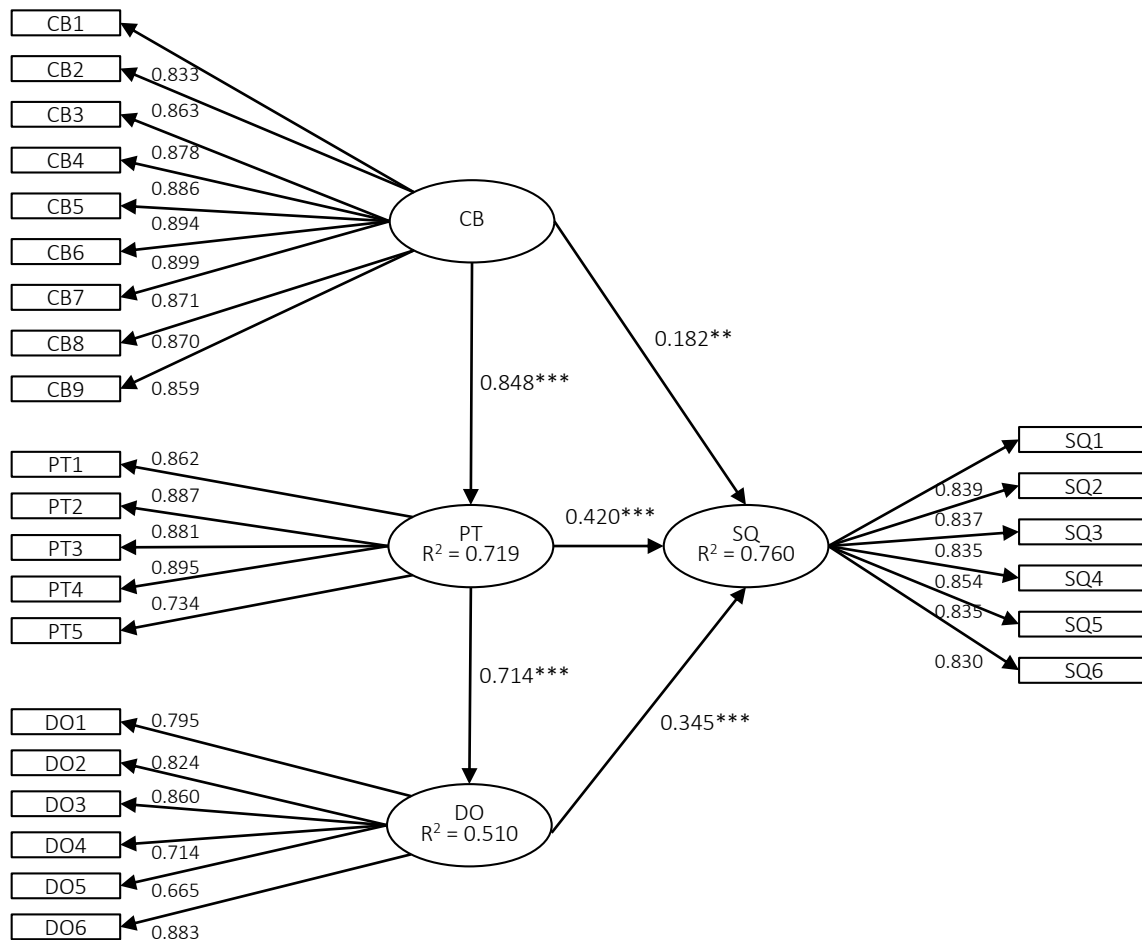


Figure 1. Structural equation model

4. HYPOTHESIS DEVELOPMENT AND TESTING

Hypotheses are tested through measuring the total effects of ADANCO 2.0.1. The total effect of one variable on another is the sum of direct effects and all of the indirect effects. The value of the

direct effects is interpreted as an increase in the dependent variables if the independent variables were increased by one standard deviation. Under Hypothesis testing, the results from the data analysis will be discussed to answer the research questions and related hypotheses. The results for testing all of these hypotheses are summarized below and followed by an interpretation for the respective hypothesis (Table 1).

Table 1. Total effects under the structural equation model

Effect	Original coefficient	Standard bootstrap results					Percentile bootstrap quantiles				Supported
		Mean value	Standard error	t-value	p-value (2-sided)	p-value (1-sided)	0.50%	2.50%	97.50%	99.50%	
CB → PT	0.8481	0.8478	0.0221	38.2887	0	0	0.787	0.802	0.8879	0.8955	Yes
CB → SQ	0.1823	0.1882	0.066	2.7625	0.0058	0.0029	0.0229	0.0661	0.3187	0.3672	Yes
PT → DO	0.7142	0.713	0.0399	17.9078	0	0	0.5959	0.6321	0.7812	0.7996	Yes
PT → SQ	0.42	0.4206	0.0554	7.5826	0	0	0.2718	0.3157	0.5275	0.5716	Yes
DO → SQ	0.3453	0.3386	0.068	5.0755	0	0	0.129	0.1918	0.4596	0.4997	Yes

4.1. Hypotheses

H1: There is a significant relationship between the cost of borrowing and the service quality of banks.

The first hypothesis (*H1*) shows that the impact of the cost of borrowing on service quality is highly significant (t-value = 2.7625; CI > 99%). Thus, *H1* ($\beta = 0.1823$; $p < 0.00$) is accepted. This indicates that parameters, such as application fees (0.833), valuation fees (0.863), processing fees (0.878), fixed interest rates (0.886), foreclosure charges (0.894), modification fees (0.899), late payment fees (0.871), bureaucratic processes (0.870) and brokerage fees (0.859), can be derived through the successful integration of service quality. This confirms the previous findings by Lymperopoulos et al. (2006), who indicated that service quality was the most important element that customers considered when borrowing housing loans from banking institutions.

H2: There is a significant relationship between the cost of borrowing and the processing time of banks.

The second hypothesis (*H2*) shows that the impact of the cost of borrowing on processing time is highly significant (t-value = 38.2887; CI > 99%). Thus, *H2* ($\beta = 0.8481$; $p < 0.00$) is accepted. This hypothesis stands as the most significant and stronger t-value than in all other relationships. This proves that processing time is a major influencer of decision making by a customer in choosing home loan institutions. This indicates that parameters, such as application fees (0.833), valuation fees (0.863), processing fees (0.878), fixed interest rates (0.886), foreclosure charges (0.894), modification fees (0.899), late payment fees (0.871), bureaucratic processes (0.870), and brokerage fees (0.859), can be derived through the successful integration of processing time. Sawant and Mahajan (2013) observed that banks have preferred 'the doorstep service' and offer turnaround time (TAT) services for housing loans. Thus, *H2* is in line with earlier findings.

H3: There is a significant relationship between processing time and the service quality of banks.

The third hypothesis (*H3*) shows that the impact of processing time on margin money is highly

significant (t-value = 7.5826; CI > 99%). Thus, *H3* ($\beta = 0.4200$; $p < 0.00$) is accepted. This indicates that parameters, such as the initial processing of loan application (0.862), collection of information (0.887), approval of the loan (0.881), delivery of the loan agreement (0.895), and timely withdrawal of loan (0.734), can be a result of successful integration of service quality. In confirming this finding, Bloomquist et al. (2006) observed that the processing time involves application to a set of rules for combining loan product features. The borrowers get the loan approved with a customized combination of loan features based on the loan requirements of the borrower and the rules. These processes are carried out through online banking.

H4: There is a significant relationship between the processing time and documentation of banks.

The fourth hypothesis (*H4*) shows that the impact of processing time on collateral security is highly significant (t-value = 17.9078; CI > 99%). Thus, *H4* ($\beta = 0.7142$; $p < 0.00$) is accepted. This indicates that parameters, such as the initial processing of loan applications (0.862), collection of information (0.887), approval of the loans (0.881), delivery of loan agreements (0.895), and timely withdrawal of the loans (0.734), can be a result of successful integration of documentation. Deroy et al. (2013) stated that the verification process would usually continue after fulfilling conditions, such as the appraisal of the documents, the examination of title deeds and other statutory requirements. This leads to variations in processing time due to the submission of different types of documents. With the development of digital applications, automatic processing of loans is emerging (Norris, 1999).

H5: There is a significant relationship between the documentation and the service quality of banks.

The fifth hypothesis (*H5*) shows that the impact of documentation on service quality is highly significant (t-value = 5.0755; CI > 99%). Thus, *H5* ($\beta = 0.3453$; $p < 0.00$) is accepted. This indicates that parameters, such as a simple application form (0.795), uninterrupted technical assistance (0.824), collecting auxiliary documents (0.860), educational qualifications (0.714), submission of fore-

closure documents (0.665), and power of attorney (0.883), can be a result of successful integration of service quality. With this connection, the point of view put forward by Ungan (2006) should be borne in mind. He opined that if the submission of details increases, the process of documentation becomes very difficult, which affects the level of the service quality.

CONCLUSION

Based on the structural equation model, there is no doubt that the cost of borrowing, processing time and documentation are decisive influencing factors in determining the service quality of banking institutions offering housing loans. The measures and outcomes of service quality are assessed by initial personal contact, online banking services, humanitarian approaches, provision of information about services, the promise of service delivery, and field verification. The path coefficient of these six outcomes ranges from 0.830 to 0.854. This is a clear indication of this research which has a very strong effect on service quality of a banking institution on housing loans. Wright (1934) opines that a path coefficient of 0.8 and above has the strongest impact on service quality outcomes. This has a wider practical implication for all banking institutions to realize that service quality is a very important determinant for sanctioning home loans to customers. This study was conducted only in India. It may be extended to other countries such as Sri Lanka, Bangladesh, Indonesia, and Malaysia. This study also centers around housing loans at banks. Future research may be extended to other types of loans that are sanctioned by banking institutions.

This study analyzed and suggested the service quality of Indian banking institutions as a prime factor in granting housing loans. From the structural equation model, the cost of borrowing is the dominating factors by exhibiting highest t-value of 38.29 to influence processing time, which in turn is largely related to service quality. Besides, the processing time recorded the 2nd highest t-value of 17.91 to influence documentation which in turn has a significant relationship with service quality. Similarly, the outcomes of this study are measured by housing loans without margin money, customer satisfaction with service, instant sanction of housing loans, and prompt delivery of services. This is a substantial contribution to the research on banking institutions in India. This paper recommends that the time has come for banking institutions to take steps to introduce improved services on the instant sanctioning of loans with real-time access, without resorting to bureaucratic policies and procedures to housing loan customers.

AUTHOR CONTRIBUTIONS

Conceptualization: Shankar Babu Mani.

Data curation: Shankar Babu Mani.

Formal analysis: Shankar Babu Mani.

Investigation: Shankar Babu Mani.

Methodology: Viswanathan Ekambaram.

Project administration: Viswanathan Ekambaram.

Resources: Shankar Babu Mani.

Software: Shankar Babu Mani.

Supervision: Viswanathan Ekambaram.

Visualization: Viswanathan Ekambaram.

Writing – original draft: Shankar Babu Mani.

REFERENCES

1. Anderson, M., Jaffe, F., Hibbert, C., Virkki, J., Kravitz, J., Chang, S., & Palmer, E. (2003). *Method and system for processing electronic documents* (U.S. Patent No. 6,609,200). Washington, DC: U.S. Patent and Trademark Office. Retrieved from <https://patentimages.storage.googleapis.com/b1/3b/99/c2ea7e2e0ebc3e/US6609200.pdf>
2. Anidiobu, G. A., Okolie, P. I., & Ugwuanyi, W. N. (2018). Effect of mortgage finance on housing delivery in Nigeria: The Primary Mortgage Institution (PMI) perspective. *Journal on Banking Financial Services & Insurance Research*, 8(2), 36-49. Retrieved from https://www.academia.edu/37363022/EFFECT_OF_MORTGAGE_FINANCE_ON_HOUSING_DELIVERY_IN_NIGERIA_THE_PRIMARY_MORTGAGE_INSTITUTION_PMI_PERSPECTIVE
3. Bhanumurthy, N. R., & Singh, P. (2013). Financial sector development and economic growth in Indian states. *International Journal of Economic Policy in Emerging Economies*, 6(1), 47-63. Retrieved from <http://www.inder-science.com/offer.php?id=54472>
4. Bhutta, N., Skiba, P. M., & Tobacman, J. (2015). Payday loan choices and consequences. *Journal of Money, Credit and Banking*, 47(2-3), 223-260. <https://doi.org/10.1111/jmcb.12175>
5. Bloomquist, E., Spellman, R., & Wilson, B. J. (2006). *Mortgage loan customization system and process* (U.S. Patent No. 7,089,503). Washington, DC: U.S. Patent and Trademark Office. Retrieved from <https://patents.google.com/patent/US7089503B1/en?q=7%2c089%2c503>
6. Brown, S. R. (2016). The influence of homebuyer education on default and foreclosure risk: A natural experiment. *Journal of Policy Analysis and Management*, 35(1), 145-172. <https://doi.org/10.1002/pam.21877>
7. Carr, J. H. (2007). Responding to the foreclosure crisis. *Housing Policy Debate*, 18(4), 837-860. <https://doi.org/10.1080/10511482.2007.9521623>
8. Chiang, S. L., Yang, T. T., & Tsai, M. S. (2016). Assessing mortgage servicing rights using a reduced-form model: Considering the effects of interest rate risks, prepayment and default risks, and random state variables. *Journal of Housing Economics*, 32, 29-46. <https://doi.org/10.1016/j.jhe.2016.04.001>
9. Conklin, J. N. (2017). Financial literacy, broker-borrower interaction and mortgage default. *Real Estate Economics*, 45(2), 376-414. <https://doi.org/10.1111/1540-6229.12140>
10. Cooley, S. (2005). Transaction fees. *Mortgage Banking*, 65(5), 111.
11. Craft, J. C. (2015). Preventing exploitation and preserving autonomy: Making springing powers of attorney the standard. *University of Baltimore Law Review*, 44(3), 4. Retrieved from <https://scholarworks.law.uab.edu/ubl/vol44/iss3/4>
12. Cronin Jr, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, 56(3), 55-68. <https://doi.org/10.2307/1252296>
13. Daniels, S. (2009). *Banks boost lending fees (cover story)*. Crain's Chicago Business.
14. Danis, M. A., & Pennington-Cross, A. (2005). A Dynamic Look at Subprime Loan Performance. *The Journal of Fixed Income Summer*, 15(1), 28-39. <https://doi.org/10.3905/jfi.2005.523088>
15. Davis, J. M. (2013). Paper weight: Problems in the documentation and enforcement of transferred mortgage loans, and a proposal for an electronic solution. *American Bankruptcy Law Journal*, 87(3), 305-373. Retrieved from https://www.researchgate.net/publication/298872241_Paper_Weight_Problems_in_the_Documentation_and_Enforcement_of_Transferred_Mortgage_Loans_and_a_Proposal_for_an_Electronic_Solution
16. De Araujo, D. K. G., Barroso, J. B. R. B., & Gonzalez, R. B. (2016). *Loan-To-Value Policy and Housing Loans: Effects on constrained borrowers* (Banco Central do Brasil Working Paper No. 445). Retrieved from <https://www.bcb.gov.br/pec/wps/ingl/wps445.pdf>
17. Der Hovanesian, M., & Beucke, D. (2005). Real estate, unreal applications. *BusinessWeek*, (3937), 11.
18. Deroy, C. I., Dufficy, J., Collins, K., Hull, R. S., & Ramanathan, R. (2013). *Product, system and method for certification of closing and mortgage loan fulfillment* (U.S. Patent No. 8,527,401). Washington, DC: U.S. Patent and Trademark Office. Retrieved from <https://patents.google.com/patent/US8527401B2/en?q=8%2c527%2c401>
19. Dhillon, U. S., Shilling, J. D., & Sirmans, C. F. (1987). Choosing between fixed and adjustable rate mortgages: Note. *Journal of Money, Credit and Banking*, 19(2), 260-267. Retrieved from https://econpapers.repec.org/article/mcbjmoncb/v_3-a19_3ay_3a1987_3ai_3a2_3ap_3a260-67.htm
20. Eaton, D. (2005). Some key points about commercial loan points. *New Hampshire Business Review*, 27(7), 35.
21. Ferguson, B. (1999). Micro-finance of housing: A key to housing the low or moderate-income majority? *Environment and Urbanization*, 11(1), 185-200. Retrieved from <http://www.pdfwww.china-up.com:8080/international/case/case/1287.pdf>
22. Ghosh, P., Rai, A., Chauhan, R., Gupta, N., & Singh, A. (2015). Exploring the moderating role of context satisfaction between job characteristics and turnover intention of employees of Indian public sector banks. *Journal of Management Development*, 34(8), 1019-1030. <https://doi.org/10.1108/JMD-10-2014-0138>
23. Hartman, C. (2017). *Housing urban America*. Routledge.
24. Kaura, V. (2013). Antecedents of customer satisfaction: a study of Indian public and private sector banks. *International*

- Journal of Bank Marketing*, 31(3), 167-186. <https://doi.org/10.1108/02652321311315285>
25. Kaura, V., & Datta, S. K. (2012). Role of customers and employees in service delivery and customer satisfaction: Survey evidence from banks in Rajasthan. *IUP Journal of Bank Management*, 11(4), 121-126. Retrieved from <https://search.proquest.com/openview/bc10e92b9054e1a1cecc00616fa578bff/1?pq-origsite=gscholar&cbl=54443>
 26. Lee, J., & Hogarth, J. M. (2000). Consumer information search for home mortgages: who, what, how much, and what else? *Financial Services Review*, 9(3), 277-293. [https://doi.org/10.1016/S1057-0810\(01\)00071-3](https://doi.org/10.1016/S1057-0810(01)00071-3)
 27. Leng, J., Chen, Q., Mao, N., & Jiang, P. (2018). Combining granular computing technique with deep learning for service planning under social manufacturing contexts. *Knowledge-Based Systems*, 143, 295-306. <https://doi.org/10.1016/j.knsys.2017.07.023>
 28. Leyer, M., Heckl, D., & Moormann, J. (2015). Process performance measurement. In *Handbook on Business Process Management 2* (pp. 227-241).
 29. Lymperopoulos, C., Chaniotakis, I. E., & Soureli, M. (2006). The importance of service quality in bank selection for mortgage loans. *Managing Service Quality: An International Journal*, 16(4), 365-379. <https://doi.org/10.1108/09604520610675702>
 30. Martin, N. (2006). TBMC scraps application fees to lure brokers. *Mortgage Strategy*, 16.
 31. McNulty, J. E., Garcia-Feijoo, L., & Viale, A. (2019). The regulation of mortgage servicing: Lessons from the financial crisis. *Contemporary Economic Policy*, 37(1), 170-180. <https://doi.org/10.1111/coep.12272>
 32. McQuiston, D. H. (2018). Forum credit union: Implementing a first-time home buyer program. *Journal of Case Studies*, 36(2), 53-65. Retrieved from <https://www.ignited.global/case/business/forum-credit-union-implementing-first-time-home-buyer-program>
 33. Meador, M. (1982). The effects of mortgage laws on home mortgage rates. *Journal of Economics and Business*, 34(2), 143-148. [https://doi.org/10.1016/0148-6195\(82\)90027-3](https://doi.org/10.1016/0148-6195(82)90027-3)
 34. Mian, A., & Sufi, A. (2017). Fraudulent income overstatement on mortgage applications during the credit expansion of 2002 to 2005. *The Review of Financial Studies*, 30(6), 1832-1864. Retrieved from <https://www.jstor.org/stable/26166333>
 35. Murray, K. (2018). The corruptive influence of criminal money on legitimate markets. In *Corruption in Commercial Enterprise: Law, Theory and Practice* (p. 48).
 36. Norris, J. A. (1999). *System and method for real time loan approval* (U.S. Patent No. 5,870,721). Washington, DC: U.S. Patent and Trademark Office. Retrieved from <https://patentimages.storage.googleapis.com/11/98/e0/cf53774f-c7156e/US5870721.pdf>
 37. Panagariya, A., & More, V. (2014). Poverty by social, religious and economic groups in India and its largest states. *Indian Growth and Development Review*, 7(2), 202-230. <https://doi.org/10.1108/IGDR-03-2014-0007>
 38. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41-50. <https://doi.org/10.1177/002224298504900403>
 39. Pfeiffer, R. A. C. (2017). Real Estate Under Construction, Consumer Law and Development. In *Consumer Law and Socioeconomic Development* (pp. 317-330). Springer, Cham.
 40. Rodgers, W., & McFarlin, T. G. (2017). Foreclosure and options for avoiding foreclosure. In *Decision making for personal investment* (pp. 79-84). Palgrave Macmillan, Cham.
 41. Sawant, K., & Mahajan, S. (2013). Housing loan management: a study of Kuc Bank Ltd. *Journal of Commerce and Accounting Research*, 2(1), 49-54. Retrieved from <http://www.publishingindia.com/GetBrochure.aspx?query=UERGQnJvY2h1cmVzfC8xNDc2LnBkZnwwMTQ3Ni5wZGY=>
 42. Schmeiser, M. D., & Gross, M. B. (2016). The determinants of subprime mortgage performance following a loan modification. *The Journal of Real Estate Finance and Economics*, 52(1), 1-27. <https://doi.org/10.1007/s11146-015-9500-9>
 43. Schwartz, E. S., & Torous, W. N. (1992). Prepayment, default, and the valuation of mortgage pass-through securities. *The Journal of Business*, 65(2), 221-239. <http://dx.doi.org/10.1086/296566>
 44. Tealdi, D. A., DeArme, M. S., & Leung, D. (2012). *Online mortgage approval and settlement system and method therefor* (U.S. Patent No. 8,145,556). Washington, DC: U.S. Patent and Trademark Office. Retrieved from <https://patents.google.com/patent/US8145556B2/en?q=8145556>
 45. Thomas, P. (2016). *Editor's note: Lenders – time to get transparent on valuation fees*. Mortgage Strategy. Retrieved from <https://www.mortgagestrategy.co.uk/opinion/editors-note-the-value-of-transparency/>
 46. Toscano, P. (2002). *On line loan process* (U.S. Patent Application No. 09/845,622). Retrieved from <https://patents.google.com/patent/US20020052835A1/en?q=09%2f845%2c622>
 47. Uberti, M., Landini, S., & Casellina, S. (2014). Adjustable and fixed interest rates mortgage markets modelling. *Central European Journal of Operations Research*, 22(2), 391-406. Retrieved from <https://link.springer.com/article/10.1007/s10100-013-0297-4>
 48. Ungan, M. C. (2006). Standardization through process documentation. *Business Process Management Journal*, 12(2), 135-148. <https://doi.org/10.1108/14637150610657495>
 49. Ward, D. R. (2009). Product differentiation and consumption efficiency in mortgage markets. *Journal of Business Research*, 62(8), 805-809. Retrieved from <https://ideas.repec.org/a/eee/jbrese/v62y-2009i8p805-809.html>
 50. Wright, S. (1934). The method of path coefficients. *The Annals of Mathematical Statistics*, 5(3), 161-215. Retrieved from <https://www.gwern.net/docs/statistics/1934-wright.pdf>