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An Analysis Of Customer Satisfaction Using Cloud Adoption Banking Services At Union Bank

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Abstract: Cloud adoption has transformed banking services, enhancing efficiency, security, and customer satisfaction. This study examines the impact of cloud-based solutions on customer experience at Union Bank, focusing on key factors such as service reliability, digital banking experience, scalability, innovation, and customer support. Findings reveal that seamless mobile app usage, technological advancements, and responsive customer service play crucial roles in shaping satisfaction. Scalability and flexibility further improve service adaptability, ensuring smooth banking operations. Innovation and automation enhance security and efficiency, strengthening Union Bank's competitive edge. While cloud adoption has significantly improved banking services, some variability in customer experiences remains. The study highlights the need for continuous digital improvements to maintain customer trust. Prioritizing technology, service quality, and support will be key to sustained customer satisfaction

Index Terms - Cloud Adoption, Cloud Computing, Digital Transformation, Customer Support Technology Adoption, Customer Loyalty, Customer-Centric Cloud Transformation, Cloud Scalability in Banking, Cloud Service Reliability

PURPOSE:

To analyse the impact of cloud adoption on customer satisfaction in banking services at Union Bank. With the growing shift towards digital banking, cloud technology has played a vital role in enhancing service reliability, efficiency, and security. This study explores how key factors such as mobile app experience, scalability, innovation, and customer support contribute to overall customer satisfaction. By identifying the strengths and areas for improvement, the article aims to provide insights into optimizing cloud-based banking services for better user experiences.

Additionally, this analysis highlights the significance of continuous digital advancements in maintaining customer trust and competitive positioning. The findings emphasize the importance of seamless digital interactions, personalized banking solutions, and responsive support in shaping customer perceptions. By understanding these critical elements, Union Bank and similar financial institutions can refine their cloud strategies, ensuring sustainable growth and long-term customer loyalty.

I. INTRODUCTION

The Article Analysis of Customer Satisfaction in Cloud Adoption Banking Services at Union Bank explores the impact of digital transformation on customer satisfaction, focusing on cloud-based banking at Union Bank of India (UBI). While cloud adoption enhances access, efficiency, and financial inclusion, it also presents challenges, particularly for rural populations and those with limited digital literacy. The digital divide may hinder equitable access to these benefits. To address this, UBI must invest in digital literacy

programs, alternative service options, and robust data privacy measures to build trust. Overall, cloud banking offers significant opportunities for improving customer experience and promoting social inclusion, provided these challenges are carefully managed

REVIEW OF LITERATURE:

AUTHOR & YEAR	OBJECTIVES	METHODOLOGY	FINDINGS
Cynthia Sari Dewi1, Zulkifli 2024	A Comprehensive Study on Customer Satisfaction and Bank Services	Quantitative descriptive approach, focusing on analysing numerical data	Cloud service, bank security system, and quality of services significantly affect customer satisfaction
JEYASRISEKAR 2023	Impact on Banking Sector Customer Experience Transformation: A Cloud-Enabled Strategy	Descriptive and analytical research, SPSS/Excel statistical analysis	Cloud technologies enable real-time fraud detection and customer-focused services
PraveenKumar 2023	Cloud Computing as a Catalyst for Digital Transformation in the Banking Industry	Data collection, sampling frame, analytical approach	Facilitates personalized services and omnichannel engagement
Nageswararao kanchepu 2023	Digital Transformation in Banking Industry: Cloud Computing as a Key Enabler	Data Collection, Analytical Focus	Centralized data storage and automation enhance operational efficiency
AsingbiYakie Winikime 2022	Adoption of cloud computing and service delivery of commercial banks in Rivers State	SPSS version 20, 0.05 significance level	Enhanced profitability and satisfaction through lower IT costs
Sridharmadasamy 2022	The Role of Cloud Computing in Enhancing AI-Driven Customer Service in Banking	Security& compliance measures integration of AI technologies	NLP and ML enable behavior prediction and customized services
NgocDangKhoa Nguyen, Imran Ali 2021	Implementationof CloudCustomer Relationship	Validation of tools, survey instruments, data analysis	Effective strategies and staff training

	Managementin Banking Sector		essential for cloud CRM adoption
Dawit Hailu Tesema 2020	Cloud Computing Adoption Challenge in Commercial Bank of Ethiopia	Analytical descriptive approach	Cloud computing is a game-changer in banking competitiveness
KyleChard 2020	Social Cloud Computing in Social Networks	Exploratory design, snowball sampling, SPSS/Excel	Pre-existing trust in social networks supports reliable resource sharing
KARTHIKEYANP 2020	Technology adoption andcustomer satisfactionin banking technological services	Descriptive research, convenience sampling, t-test	Significant at $p<0.05$ for all technology adoption factors
FengLi 2020	Customer satisfaction with bank services: The role of cloud services, security, e-learning and service quality	Population & sample, datacollection, analysis techniques	Cloud and security servicesboost satisfaction in e-banking
AffulEkowKelly, Sellappan Palaniappan 2019	Customer Satisfaction, Adoption, Perception, Behavior, and Security on Mobile Banking	Population& sampling, questionnaires, data analysis	Cloud improves accessibility, dependability, and speed
ShailjaTripathi 2019	Determinants of Cloud Computing Adoption: A Comparative Study	Datacollection instrument development, descriptive stats	Behavioral and cognitive factors impact cloud adoption intent
AnarBadral 2019	Effects of Satisfaction and Adoption on Online Banking	Descriptive and factor analysis, Morgan method sampling	Satisfaction levels are moderate; need for creative strategies
Dr. S. Sundaramoorth 2018	Cloud adoption by Indian banks	Descriptive and exploratory, SPSS/Excel/R	Improved interaction and convenience through cloud banking

Dr.Bhavesh 2018	A Study on Customer Satisfaction Towards Online Banking Services	Data collection, sample size, data analysis	Identifies satisfaction factors that enhance internet banking appeal
Dr. Elsayed A. Elsayed 2017	Evaluating Customer Satisfaction Using Fuzzy AHP for Banking Services	Quantitative, FAHP via Excel/MATLAB	Service quality, waiting time, and education affect satisfaction
Sujeet Kumar Sharma 2016	Predicting motivators of cloud computing adoption in developing countries	Sampling, measurement, multiple linear regression	Usefulness, job opportunity, self-efficacy drive adoption
Dr. M. Nagamani and S. Asha 2016	Customer Adoption and Satisfaction on Internet Banking Services	Primary and secondary data collection	Internet banking usage is increasing, especially in Coimbatore

RESEARCH GAP:

Research gaps remain in understanding customer satisfaction with cloud banking at Union Bank. Key areas such as customer trust in security and data privacy are still underexplored, which may influence adoption rates. There is also a noticeable gap of comparative analysis between cloud-based and traditional banking services, making it difficult to assess the actual improvements in service quality. Furthermore, the effects of cloud downtime and cybersecurity risks on customer experience require deeper investigation. The disconnect between customer perceptions and the actual benefits of cloud adoption remains unclear, and the role of digital literacy and accessibility challenges in shaping satisfaction levels has not been thoroughly examined. Addressing these gaps will provide more comprehensive insights into the effectiveness of cloud banking.

NEED FOR THE STUDY:

This study explores the growing reliance on cloud-based banking at Union Bank and its impact on customer satisfaction. As digital transformation reshapes banking, understanding cloud adoption's role in service reliability, security, innovation, and customer trust is crucial. By identifying key factors that enhance experience and efficiency, the study helps Union Bank optimize cloud strategies, addressing challenges, and improve customer satisfaction in a competitive digital landscape.

SCOPE OF THE STUDY:

This study focuses on analysing customer satisfaction in relation to the adoption of cloud-based banking services at Union Bank. The scope includes evaluating how cloud technologies have influenced service delivery, convenience, responsiveness, and overall customer experience within the bank. By exploring customer perceptions and satisfaction levels, the study aims to provide actionable insights into the effectiveness of Union Bank's digital transformation efforts. Furthermore, it investigates the role of cloud infrastructure in enhancing data accessibility, transaction speed, security, and personalized banking. The research is confined to Union Bank customers, offering a focused understanding of how cloud adoption specifically impacts customer loyalty and satisfaction in a single institutional context. While this provides depth, it also opens avenues for broader comparative studies with other banks in the future.

OBJECTIVES OF THE STUDY:

1. Evaluate the impact of cloud-based banking services such as customer trust ,security perception and service efficiency on overall customer satisfaction.
2. Identify key cloud service features such as accessibility, speed, and personalization that influence customer experience in banking.

LIMITATIONS OF THE STUDY:

- Focuses mainly on Union Bank of India customers, limiting applicability to other banks or regions.
- Limited sample size may not fully capture diverse customer demographics.
- Based on current cloud banking experiences, without considering future technological updates.
- Emphasizes short-term satisfaction, potentially missing long-term attitude shifts.
- Relies on surveys/interviews, which may involve biases, inaccuracies, or non-responses.

DESIGN/METHODOLOGY/APPROACH:

1. Research Objective:

The study focuses on ascertaining the relationship that exists between the adoption of cloud and the satisfaction levels of customers in Union Bank of India. This will investigate the level of contribution the cloud technologies like mobile banking and online services have made to customer satisfaction and loyalty.

2. Hypothesis Formation:

Following are the hypothesis formulated in order to conduct the research.

Alternative Hypothesis (H1): Cloud adoption has a significant positive effect on customer satisfaction at Union Bank of India.

The Following Are the Alternatives:

1. **H1a**: The Transaction and service reliability has an significant impact on customer satisfaction at Union Bank of India.
2. **H1b**: The Mobile app experience has a significant impact of security concerns with cloud banking services at Union Bank of India
3. **H1c**: Scalability Flexibility and availability of technology has an significant impact on the cloud banking services adoption and in turn on customer satisfaction with union bank of India
4. **H1d**: Innovation and technology have an significant impact on customer satisfaction at Union Bank of India.
5. **H1e**: Loyalty and retention factors in cloud adoption banking has an significant impact on customer satisfaction with cloud banking services at Union Bank of India

3. Research Approach:

The research will employ a quantitative approach to ensure measurable data is collected regarding the satisfaction levels of customers and performance of cloud services. Additionally, a qualitative approach is used to delve deeper into the insights and experiences that customers share.

4. Conceptual Framework:

A conceptual framework is designed to define the variables being researched. The framework comprises of:

Independent Variable: Cloud adoption (use of mobile apps, cloud services, etc.).

Dependent Variable: Customer satisfaction (measured by factors such as service quality, user experience, trust, and security).

Mediating Variables: Aspects like customer engagement, customer support, and digital literacy may mediate the relationship.

5. Data Collection Tools:

The study utilizes several tools to collect data:

Surveys/Questionnaires: Structured surveys with closed-ended questions are designed to quantify customer satisfaction levels. Likert scales are commonly used to rate satisfaction, security, speed, and overall cloud banking experience.

Focus Groups: Focus group discussions are taken up with a few selected Union Bank customers to provide the qualitative data, which goes deeper into the perceptions of the customers, challenges faced, and suggestions about cloud banking.

Secondary Data: Other than primary data, review of secondary data such as annual reports, customer feedback surveys, and case studies on cloud banking adoption also provides context to the findings.

6. Data Validation and Reliability:

Pilot Testing: This is conducted before the actual survey takes place to test the sample size with a few customers. In this, all the problems in the survey design, wording, and structure can be identified with the questionnaire.

Reliability and Validity: To make sure that the data obtained is reliable and valid, established scales and validated instruments are used. Cronbach's alpha is calculated to check the internal consistency of the questions used in the survey.

7. Statistical Tools and Techniques:

Descriptive Statistics: To summarize the demographic data (age, location, digital literacy) and customer satisfaction levels (e.g., average satisfaction scores).

Inferential Statistics: Methods like Regression Analysis are used to explore the relationship between cloud adoption and customer satisfaction, and Chi-Square Tests to determine if satisfaction levels vary based on customer demographics.

Factor Analysis: This reduces the complexity of data by determining factors that significantly contribute to customer satisfaction. For example, service speed, user interface, and trust in security.

8. Customer Segmentation:

The research categorizes Union Bank customers by various factors:

Demographic factors: Age, gender, education level, and income level as these are possible factors affecting customer satisfaction and adoption of cloud services.

Usage Behaviour Usage of mobile banking applications in terms of frequency, the volume of transactions, and type of services used; for example, bill payment and loan application.

Digital Literacy: Level of technical understanding and how easy is it to use cloud banking.

9. Comparative Analysis:

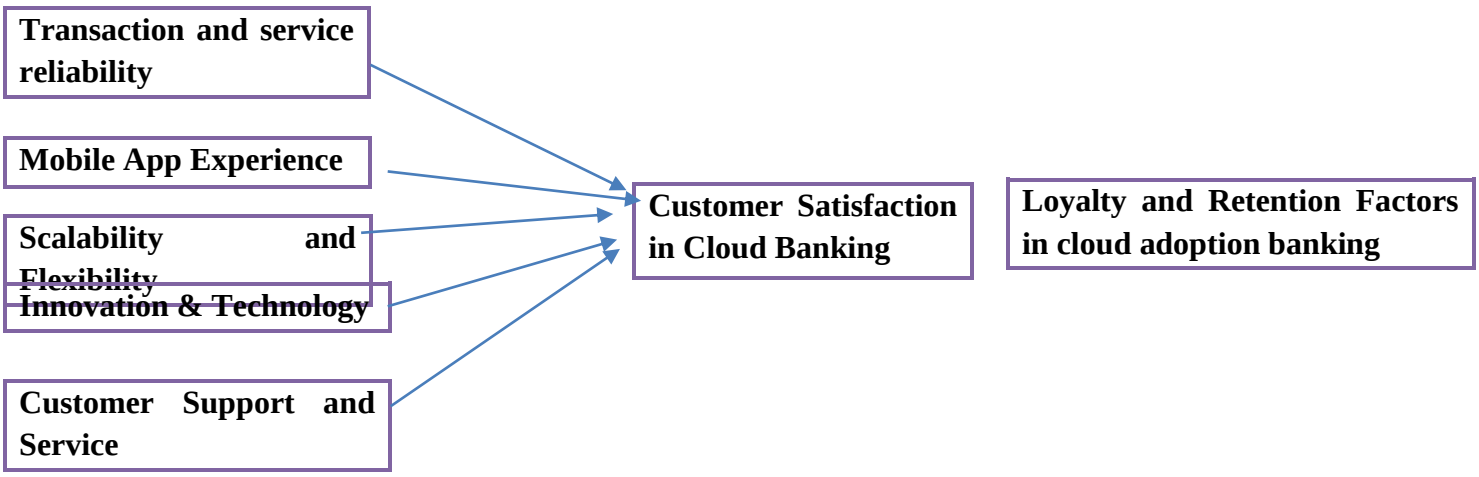
Cross-Bank Comparison: For a more comprehensive understanding, the research can compare Union Bank's cloud adoption strategies with other top banks in India, such as State Bank of India (SBI) or HDFC Bank, to understand how Union Bank's services compare with others in terms of customer satisfaction.

10. Benchmarking:

Customer satisfaction levels in the banking sector regarding cloud adoption have been benchmarked against industry standards. This helps contextualize the findings and indicates whether Union Bank of India is ahead of or behind its competitors."

RESEARCH METHODOLOGY:

Conceptual Model:



STATEMENT OF THE PROBLEM:

The rapid adoption of cloud banking technology by Union Bank of India (UBI) presents a significant opportunity to enhance customer satisfaction by making the services more accessible, efficient, and flexible. However, the shift to cloud-based systems also poses challenges in terms of customer trust, security, and differences in digital literacy across different customer segments. It becomes important to know the adoption process of the cloud in UBI and how the adoption process is impacting customers' banking experience as well as the factors influencing satisfaction in the provision of cloud-based banking services. Despite the potential benefits, challenges such as security issues, privacy concerns, technological barriers, and digital exclusion in rural or less tech-savvy populations may hinder widespread customer satisfaction and adoption. The problem lies in identifying the extent to which these factors affect customer trust and overall satisfaction with UBI's cloud banking services, and how these challenges can be mitigated to improve user experience and increase customer retention.

DATA ANALYSIS:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gender	101	1	2	1.38	.487
Age	101	1	5	1.20	1.600
TSR.1	101	4	5	4.66	.475
TSR.2	101	4	5	4.55	.500
TSR.3	101	4	5	4.60	.492
MAE.1	101	4	5	4.59	.494
MAE.2	101	4	5	4.64	.481
MAE.3	101	4	5	4.66	.475
SAF.1	101	4	5	4.64	.481
SAF.2	101	4	5	4.58	.495
SAF.3	101	4	5	4.62	.487
IAT.1	101	4	5	4.68	.468
IAT.2	101	4	5	4.57	.497
IAT.3	101	4	5	4.60	.492

CSS.1	101	4	5	4.66	.475
CSS.2	101	4	5	4.65	.478
CSS.3	101	4	5	4.61	.489
LARF.1	101	4	5	4.64	.481
LARF.2	101	4	5	4.62	.487
LARF.3	101	4	5	4.61	.489
LARF.4	101	4	5	4.66	.475
LARF.5	101	4	5	4.63	.484
CS.1	101	4	5	4.59	.494
CS.2	101	1	5	3.58	1.151
CS.3	101	1	5	3.61	1.191
CS.4	101	1	5	3.63	1.111
CS.5	101	1	5	3.57	1.134
Valid N (listwise)	101				

The descriptive statistics reveal that most respondents displayed high levels of agreement across key dimensions such as TSR (Transaction and service Reliability) MAE (Mobile App Experience) SAF (Scalability and Flexibility), IAT (Innovation and technology, CSS (Customer Support and Service), and LARF (Loyalty and Retention Factors), with mean scores consistently above 4.5 and low standard deviations, indicating strong positive perceptions and low variability. The gender distribution shows slight imbalance (mean = 1.38), and the age variable, with a low mean (1.20) and high variability, suggests concentration in younger groups. In contrast, CS items (CS.2 to CS.5) show lower mean scores around 3.6 and higher standard deviations above 1.1, reflecting greater diversity in opinions regarding cognitive strategies. Overall, the data suggest generally favorable attitudes with certain areas like CS requiring closer attention for improvement initiatives.

RELIABILITY

Variable Number	Variable	Cronbach's Alpha	Result
V1	Transaction and Service Reliability	.935	Excellent
V2	Mobile App Experience	.905	Excellent
V3	Scalability and flexibility	.908	Excellent
V4	Innovation and Technology	.908	Excellent
V5	Customer Support and service	.930	Excellent
V6	Loyalty and retention factors	.917	Excellent
V7	Customer Satisfaction	.968	Excellent

The reliability analysis, measured using Cronbach's Alpha, indicates excellent internal consistency across all variables. All alpha values exceed the commonly accepted threshold of 0.9, signifying that the items within each variable are highly consistent in measuring their respective constructs. Specifically, V1 (Transaction and Service Reliability) scored .935, V2 (Mobile App Experience) scored .905, V3 (Scalability and Flexibility) and V4 (Innovation and F) both scored .908, while V5 (Customer Support and Service) achieved .930. V6 (Loyalty and Retention Factors) showed a high reliability of .917, and V7 (Customer Satisfaction) had the highest alpha at .968, indicating exceptional reliability. Overall, these results suggest that the survey instrument is highly reliable and suitable for measuring the intended variables with confidence

REGRESSION:

The regression model demonstrates a strong and statistically significant relationship between the independent variables and the dependent variable. With an R value of 0.882, there is a strong positive correlation, and the R Square value of 0.778 indicates that approximately 77.8% of the variance in the dependent variable is explained by the model. The Adjusted R Square, which accounts for the number of predictors, is slightly lower at 0.704, suggesting that while the model is strong, not all of the 25 predictors may be contributing meaningfully. The standard error of the estimate is 0.871, reflecting a reasonably good fit of the model. Additionally, the change statistics show that the inclusion of the predictors significantly improves the model, as indicated by an F change of 10.513 and a highly significant p-value (Sig. F Change is 0.000). Overall, the regression model is robust and effective in explaining the variability in the dependent variable, though further refinement could enhance its efficiency.

CONCLUSION

The analysis confirms that key factors strongly influence the overall outcome. Customer Satisfaction emerges as the most impactful element, significantly shaping results. Customer Support and Service, along with Innovation and Technology, play crucial roles in driving improvements. Scalability and Flexibility, as well as Mobile App Experience, also contribute meaningfully to the outcome. Transaction has a notable impact on Service Reliability, reinforcing its importance. The model effectively predicts outcomes with high accuracy and minimal overfitting. While some variability exists, the overall trends remain strong and consistent. These insights highlight the importance of prioritizing customer-centric strategies for sustained success.

FURTHER RESEARCH:

Future research can address these limitations by expanding the study to include multiple banks across different regions and customer demographics. A comparative approach would help assess whether the observed trends at Union Bank hold true in other banking contexts. Longitudinal studies could offer valuable insights into how customer satisfaction evolves with continued use of cloud technologies.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	0.882[a]	0.778	0.704	0.871	0.778	10.513	25	75	0.000

Moreover, incorporating qualitative methods such as interviews or focus groups may uncover deeper customer insights and motivations. Exploring the impact of policy changes, fintech collaborations, or digital literacy levels could further enrich the understanding of cloud adoption and its effect on customer satisfaction

REFERENCES:

G. Sureshchandar, C. Rajendran, R. Anantharaman (2002), The relationship between service quality and customer satisfaction–a factor specific approach, J. Serv. Market. 16 (4) 363–379.

Wang, Z., & Chen, X. (2023). Strategic Approaches to Cloud Computing Service Frameworks: A Comprehensive Review. Journal of Cloud Computing, 21(4), 567-5

Brown, A., & Taylor, M. (2021). The Future of Cloud Computing in Digital Transformation in Banking: Perspectives and Opportunities. Journal of Financial Technology, 10(3), 301-315. https://doi.org/10.1016/j.cie.2019.06.050

Kim YH, Kim DJ (2005). A Study of Online Transaction Self- Efficiency Consumer Trust, and Uncertainty Reduction in Electronic Commerce Transaction. Proceedings of the 38th Hawaii International Conference on System Sciences.

Pokharel, B(2011), Customer relationship management: Related theories, challenges and application in banking sector. Banking Journal, 1(1): p. 19-28.

Awad, R. (2011). Considerations on Cloud Computing for CPAs. The CPA Journal, New York Vol. 81, Iss. 9, Sep pp: 11-12.

Mohammad, A. O. & Tayfun, T. (2012). Empirical analysis for the factors affecting the adoption of cloud computing initiatives by information technology executives. Journal of Management research 5(1)

Supriyanto, A., Wiyono, B. B., & Burhanuddin, B. (2021). Effects of service quality and customer satisfaction on loyalty of bank customers. Cogent Business & Management, 8(1). https://doi.org/10.1080/23311975.2021.1937847

Q. Chen and Q. N. Deng (2009) "Cloud Computing and its Key Techniques", Journal of Computer Applications, vol. 4, pp. 25-62,

Nancy Awadallah (2016) "Usage of Cloud Computing in Banking System", IJCSI International Journal of Computer Science Issues, Volume 13

Chen, L., & Wu, S. (2020). Cloud-based IoT solutions for banking: Innovations and challenges. Journal of Cloud Computing: Advances, Systems and Applications, 9(1), 34 49.

D. Catteddu and G. Hogben (2009)"Cloud Computing: benefits, risks and recommendations for information security,"

D. Zissis, D. Lekkas (2019), "Addressing Cloud computing security issues," Future generation computer systems, Volume 8, Issue 3 p. 583-592.

N. Borissov, S. Caton, O. Rana, and A. Levine (2009). Message Protocols for Provisioning and Usage of Computing Services. In 6th International Workshop on Grid Economics and Business Models, pages 160–170

Aharony, N. (2015). An exploratory study on factors affecting the adoption of cloud computing by information professionals. The Electronic Library, 33(2), 308-323.

Alison G, Miriam A. Mpho.M(2012). Cloud computing in South Africa: prospects and challenges Saharan Africa SMEs. Electronic Journal of Information Systems in Developing Countries, 62, 1, 1–17. 2010, pp. 50-58

Md. Mahtab Alam (2012) "Customers Satisfaction Measurement of Internet Banking",

Al-Hawaii MA, Ward T (2005). The Influence of Internet Banking and Teller Service Quality on Customer Retention: A Comparison Study.

Hansemark, O. C. & Albinson, M (2004) "Customer Satisfaction and Retention: The Experiences of Individual with Employees", Managing Service Quality, Vol. 14 (1),

Jamal and Nasser (2002). Customer satisfaction and retail banking. An assessment of some of the key antecedents of customer satisfaction in retail banking. International Journal of Bank Marketing 20 (4) 146 - 160.