A Study on Customer Satisfaction Towards Hitachi Inkjet Printers and After-Sales Services with Respect to Square Tech, Chennai

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ABSTRACT

Customer satisfaction helps a business keep its customers and build long-term relationships. In industrial printing, machines must work properly because delays can affect daily work. After-sales service is also an important part of the product. This study examines customer satisfaction with Hitachi inkjet printers and the after-sales services provided by Square Tech, an authorised dealer in Chennai. A descriptive research design was used. Primary data were collected from 100 customers through a structured questionnaire using convenience sampling. Secondary data were collected from books, journals, websites and company information. The responses were analysed using percentage analysis and Spearman rank correlation. The results showed mixed satisfaction. Overall, 37% of respondents were satisfied or highly satisfied with Square Tech, 23% were neutral and 40% were dissatisfied or highly dissatisfied. The highest dissatisfaction was for ink quality (45%), printer quality (45%) and technical support (44%). Also, 43% said spare parts were rarely or never available when needed. Spearman correlation showed no statistically significant relationship between any measured product or service factor and overall satisfaction ($\rho = -0.158$ to 0.146, $p > 0.05$).

Square Tech can improve customer satisfaction by improving printer and ink quality, technical support, spare-parts availability and service response. The company should also review service charges and collect customer feedback regularly.

Keywords: Customer Satisfaction, Hitachi Inkjet Printers, After-Sales Service, Service Quality, Industrial Printing, Customer Loyalty, Square Tech

INTRODUCTION

Customer satisfaction is important for a business to succeed and continue growing. It shows whether a product and its services meet customer expectations. Satisfaction can encourage repeat purchases, recommendations and long-term relationships. In industrial printing, printers are used for production, packaging, labelling and documentation in areas such as manufacturing, healthcare, education, logistics and government. Customers therefore expect reliable machines and good support.

Hitachi inkjet printers are used for coding, marking and packaging. Their value depends not only on machine performance but also on after-sales service. Customers expect timely installation, reliable technical support, available spare parts and affordable maintenance. If the service does not meet these expectations, customer satisfaction and repeat business may decrease.

Square Tech is based in Chennai and is an authorised dealer of Hitachi inkjet printers. It sells products and provides consumables, preventive maintenance, troubleshooting and Annual Maintenance Contracts (AMC). The Indian printer market is competitive, with many brands offering similar products. Good service and customer care can help a company stand out. Therefore, Square Tech needs to check customer satisfaction regularly.

STATEMENT OF THE PROBLEM

Customers expect industrial printers to work reliably, provide good print quality, receive timely technical support and have spare parts available at reasonable service charges. When the actual experience does not meet these expectations, customers may become dissatisfied and may not recommend or buy from the company again. Their views can differ based on print quality, speed, reliability, durability, ink quality, installation, technical support and service response.

After-sales service can also be inconsistent. Delays in responding to service requests, unavailable spare parts, poor technical support and high service charges may reduce customer confidence. Square Tech needs to understand how customers feel about Hitachi inkjet printers and its services, and whether these views are related to overall satisfaction.

OBJECTIVES

Primary Objective

To study customer satisfaction towards Hitachi inkjet printers and the after-sales services provided by Square Tech, Chennai.

Secondary Objectives

The secondary objectives are to measure customer satisfaction with Hitachi inkjet printers; identify the factors that affect satisfaction; study satisfaction with after-sales service; understand problems customers face while using the printers; examine the relationship between service quality and overall satisfaction; and suggest ways to improve customer satisfaction and service.

RESEARCH QUESTIONS

This study asks: How satisfied are customers with Hitachi inkjet printers? Which product and service factors affect satisfaction? How satisfied are customers with Square Tech's after-sales services? What problems do customers face when using the printers or getting service? Is there a relationship between product and service factors and overall satisfaction with Square Tech?

LITERATURE REVIEW

Kotler, P., Kartajaya, H. and Setiawan, I. (2021) explain that digital technology can help businesses attract customers and increase sales. They recommend improving marketing strategies and listening to customer feedback to stay competitive.

Chaffey, D. and Ellis-Chadwick, F. (2022) discuss digital marketing in business-to-business organisations. They explain that websites, search engine optimisation, email and LinkedIn can help businesses connect with customers and generate sales.

Lemon, K. N. and Verhoef, P. C. (2016) explain that customer experiences at different stages of the customer journey affect long-term relationships. Quick service and clear communication can improve satisfaction, loyalty and repeat business.

Kumar, V. and Petersen, A. (2018) explain that customer relationship management (CRM) systems help businesses organise customer information and communicate better. This can support customer satisfaction and long-term relationships.

Holliman, G. and Rowley, J. (2014) found that useful online content helps businesses attract other businesses and build trust. Publishing content regularly can also improve customer engagement.

Järvinen, J. and Taiminen, H. (2016) explain that useful online content and marketing automation can help business-to-business companies attract and retain customers and build trust.

Kingsnorth, S. (2022) explains that a strong online presence can bring more customer enquiries and support satisfaction. Businesses should invest in websites, search engine optimisation and social media.

Tiago, M. T. P. M. B. and Veríssimo, J. M. C. (2014) explain that digital platforms help businesses communicate with customers and promote products, which can strengthen customer relationships.

RESEARCH METHODOLOGY

This study used a descriptive research design to understand customer satisfaction with Hitachi inkjet printers and Square Tech's after-sales services in Chennai. Convenience sampling was used. Customers were contacted through in-person visits, phone calls, emails and online forms, and took part based on their availability and willingness. The sample included 100 customers, such as business customers, corporate clients, office administrators, procurement executives and educational institutions that had used Square Tech's products or services.

The study used both primary and secondary data. Primary data were collected through a structured questionnaire containing 25 questions. Section A covered demographic details, Section B covered customer and product information, Section C asked about product and service satisfaction, and Section D covered customer loyalty and purchase behaviour. Most questions used a five-point scale, and the questionnaire took about 10–15 minutes to complete. Secondary data came from books, journals, research articles, company information, industry reports and websites. Percentage analysis and Spearman rank correlation were used to analyse the responses. For correlation, answers were coded from 1 to 5, with higher scores showing more favourable responses.

The product factors studied were quality, printing speed, reliability, durability, features, ease of use and ink quality. The service factors were installation, technical support, response time, spare-parts availability, engineer professionalism and service charges. Overall satisfaction with Square Tech (Question 20) was treated as the main outcome.

LIMITATIONS

This study has some limitations. It covers only Square Tech customers in Chennai, so the results may not apply to other places. Time and resources limited the number of customers included. Convenience sampling means not every customer had an equal chance to take part. The results depend on customers' opinions, and some may have avoided giving negative feedback. Some customers may not know all the technical features of the printers. The study covers only Hitachi inkjet printers and should not automatically be applied to other brands. Customer expectations, technology, prices and service quality may change over time. Finally, the results depend on how honestly and clearly respondents answered the questionnaire.

PERCENTAGE ANALYSIS

Percentage analysis was used to describe the respondents and their views of Square Tech's products and services. Table 1 gives the respondents' profile. Table 2 shows their views of Hitachi inkjet printers, Table 3 covers after-sales service, Table 4 shows overall satisfaction and loyalty, and Table 5 presents awareness, purchase factors and expected improvements. In Tables 2 to 4, positive responses combine satisfied/highly satisfied categories, while negative responses combine dissatisfied/highly dissatisfied categories.

Table 1: Profile of the Respondents (N = 100)

Particulars	Category	No.	%
Gender	Female	38	38.00
	Male	34	34.00
	Prefer not to say	28	28.00
Age	25–35 years	27	27.00
	36–45 years	26	26.00
	Above 45 years	26	26.00
	Below 25 years	21	21.00
Occupation	Retail	25	25.00

Particulars	Category	No.	%
	Other	24	24.00
	Packaging	18	18.00
	Printing	17	17.00
	Manufacturing	16	16.00

Source: Primary Data (2026)

Female respondents formed the largest group (38%), followed by male respondents (34%); 28% preferred not to disclose their gender. The largest age group was 25–35 years (27%), while the other age groups were fairly evenly represented. Retail workers formed the largest occupational group (25%), with respondents also working in packaging, printing and manufacturing.

Table 2: Perception of Hitachi Inkjet Printers (N = 100)

Factor	Positive (%)	Neutral (%)	Negative (%)
Satisfaction with printer quality	35.00	20.00	45.00
Printing quality	43.00	20.00	37.00
Printing speed	43.00	17.00	40.00
Reliability in daily operations	39.00	23.00	38.00
Durability	43.00	16.00	41.00
Features meeting business requirements	41.00	19.00	40.00
Ease of operation	39.00	23.00	38.00
Ink quality	31.00	24.00	45.00

Source: Primary Data (2026)

The results for the printers were mixed. Printer quality and ink quality had the highest dissatisfaction, both at 45%. Positive responses were 35% for printer quality and 31% for ink quality. Printing quality, speed, durability and features received slightly more positive than negative responses, but the differences were small. For reliability and ease of use, positive and negative responses were nearly equal (39% and 38%). The largest single response was highly dissatisfied for printer quality (27%) and ink quality (28%); for durability, the largest group was dissatisfied (29%).

Table 3: Perception of After-Sales Services of Square Tech (N = 100)

Factor	Positive (%)	Neutral (%)	Negative (%)
Installation service	38.00	21.00	41.00
Technical support	32.00	24.00	44.00
Speed of attending service requests	43.00	15.00	42.00
Availability of spare parts	40.00	17.00	43.00
Professionalism of service engineers	42.00	20.00	38.00
Reasonableness of service charges	35.00	23.00	42.00

Source: Primary Data (2026)

Opinions about after-sales service were divided. Technical support had the highest negative response (44%), compared with 32% positive. Negative responses were also higher for installation (41% compared with 38% positive), spare-parts availability (43% compared with 40%) and service charges (42% compared with 35%). In addition, 29% strongly disagreed that service charges were reasonable. Service response time and engineer professionalism received slightly

more positive than negative responses (43% and 42%). However, 25% said service requests were handled very quickly, while 24% said they were handled very slowly, showing that service was not consistent.

Table 4: Overall Satisfaction and Loyalty Indicators (N = 100)

Factor	Positive (%)	Neutral (%)	Negative (%)
Overall satisfaction with Square Tech	37.00	23.00	40.00
Overall rating of Square Tech	45.00	22.00	33.00
Would recommend Square Tech to others	41.00	23.00	36.00
Will continue purchasing from Square Tech	41.00	26.00	33.00

Source: Primary Data (2026)

Overall satisfaction with Square Tech was mixed: 37% were satisfied or highly satisfied, 23% were neutral and 40% were dissatisfied or highly dissatisfied. A total of 45% rated the company as good or excellent, while 33% rated it poor or very poor. About 41% would recommend Square Tech and 41% expected to continue buying from it. However, 23% were unsure about recommending it and 26% were unsure about buying again.

Table 5: Awareness, Purchase Factors and Expected Improvements (N = 100)

Particulars	Category	No.	%
Source of awareness	Website	26	26.00
	Social media	23	23.00
	Sales executive	20	20.00
	Others	18	18.00
	Referral	13	13.00
Most influential purchase factor	Product quality	25	25.00
	Price	21	21.00
	After-sales service	19	19.00
	Sales support	19	19.00
	Brand reputation	16	16.00
Improvement expected	Better spare-parts availability	23	23.00
	Better customer support	20	20.00
	Better service response	20	20.00
	Lower price	19	19.00
	More product features	18	18.00

Source: Primary Data (2026)

The website (26%) and social media (23%) were the most common ways respondents learned about Square Tech. Referrals were the least common source (13%). Product quality (25%) and price (21%) were the main factors influencing purchases, while brand reputation had the lowest share (16%). Better spare-parts availability was the most requested improvement (23%), followed by better customer support and faster service response (20% each).

CORRELATION RESULT

Spearman rank correlation was used to check whether each product or service factor was related to overall satisfaction with Square Tech (Question 20). This method was chosen because the questionnaire answers are ranked categories.

H_0: There is no significant relationship between the product and service factors and overall customer satisfaction with Square Tech.

Table 6: Spearman Correlation with Overall Satisfaction (N = 100)

Variable correlated with overall satisfaction (Q20)	Spearman ρ	Sig. (2-tailed)	Strength	Decision at 5%
Printer quality satisfaction (Q6)	–0.074	0.466	Very weak	Not significant
Printing quality (Q7)	–0.084	0.405	Very weak	Not significant
Printing speed (Q8)	–0.084	0.406	Very weak	Not significant
Reliability (Q9)	0.029	0.772	Very weak	Not significant
Durability (Q10)	–0.023	0.821	Very weak	Not significant
Features and business needs (Q11)	–0.017	0.869	Very weak	Not significant
Ease of operation (Q12)	–0.103	0.306	Very weak	Not significant
Ink quality (Q13)	–0.042	0.677	Very weak	Not significant
Installation service (Q14)	0.038	0.708	Very weak	Not significant
Technical support (Q15)	–0.158	0.116	Very weak	Not significant
Service response time (Q16)	–0.007	0.946	Very weak	Not significant
Spare-parts availability (Q17)	–0.110	0.275	Very weak	Not significant
Engineer professionalism (Q18)	0.054	0.594	Very weak	Not significant
Reasonableness of service charges (Q19)	0.146	0.147	Very weak	Not significant
Recommendation intention (Q21)	0.079	0.434	Very weak	Not significant
Repurchase intention (Q22)	0.028	0.782	Very weak	Not significant
Overall rating of Square Tech (Q25)	0.037	0.711	Very weak	Not significant

Source: Primary Data (2026). Significance tested at the 5 % level.

All 17 correlation values were very weak, ranging from $\rho = -0.158$ to $\rho = 0.146$, and all p-values were above 0.05. The strongest observed relationship was with technical support ($\rho = -0.158$, $p = 0.116$), followed by service charges ($\rho = 0.146$, $p = 0.147$). Because every significance value was above 0.05, the null hypothesis was not rejected. The results do not provide enough statistical evidence of a relationship between any one factor and overall satisfaction. Negative values do not mean that better service reduces satisfaction; the values were close to zero and not significant, so no reliable direction was found.

FINDINGS

Female respondents formed the largest group (38%). The largest age group was 25–35 years (27%), and retail was the largest occupation group (25%). The website (26%) was the most common source of awareness about Square Tech.

Customer opinions about the printers were mixed. Dissatisfaction with printer quality and ink quality was 45% for each, higher than satisfaction (35% and 31%). Printing quality, speed, durability and features received slightly more positive than negative responses. Views on reliability and ease of use were almost evenly split.

After-sales service was not consistent. Technical support received the highest negative response (44%, compared with 32% positive). For 43% of respondents, spare parts were rarely or never available. Installation was rated poor or very poor by 41%, and 42% felt service charges were not reasonable. Service response time and engineer professionalism received more positive than negative responses, but only by small margins.

Overall satisfaction was mixed: 37% were satisfied, 23% were neutral and 40% were dissatisfied. Although 45% rated Square Tech as good or excellent, only 41% said they would recommend the company and 41% expected to buy from it again. A further 23% were unsure about recommending it and 26% were unsure about buying again. Product quality (25%) and price (21%) were the main purchase factors. Customers most often requested better spare-parts availability (23%), customer support (20%) and service response (20%).

Spearman correlation found no statistically significant relationship between any measured factor and overall satisfaction at the 5% level. All values were very weak ($\rho = -0.158$ to 0.146). The strongest observed association was with technical support, but it was not statistically significant ($p = 0.116$).

SUGGESTIONS

Square Tech should regularly check printer performance, print accuracy, durability and reliability to address customer complaints. It should also review ink quality, compatibility and replacement procedures because ink quality had one of the highest dissatisfaction levels. Technical support should be improved through clear support channels, trained staff and proper complaint tracking. The company should set service response-time targets and monitor them.

The company should keep enough commonly used spare parts in stock and create a faster way to obtain parts that are unavailable. Installation steps should be standardised, and engineers should be trained to provide consistent service. Customers should receive updates about their requests, repair progress, spare-parts availability and expected completion dates.

Because customers have different views about service charges, the company should explain charges clearly and consider transparent maintenance and technical-service packages. Since the website is the main source of awareness, Square Tech should improve its website with clear product details, customer reviews, service information and easy enquiry options. It should also collect feedback regularly to track satisfaction and check whether improvements are working.

DISCUSSION

The study found mixed satisfaction with Square Tech and its Hitachi inkjet printers. For many questions, positive and negative responses were close, and many customers were neutral. This is a concern for a company that depends on repeat purchases and service contracts, because customers who are unsure may choose competitors.

Printer quality and ink quality caused the most dissatisfaction. After-sales service also varied from customer to customer. For example, 25% said service requests were handled very quickly, while 24% said they were handled very slowly. This may mean that service depends on the engineer, location or situation rather than following the same standard every time. As Lemon and Verhoef (2016) explain, customer experience can affect satisfaction and loyalty.

The correlation results should be understood carefully. None of the 17 factors had a statistically significant relationship with overall satisfaction, and all correlation values were close to zero. This does not mean these factors are unimportant. Customers still asked for better spare-parts availability, customer support and service response. The sample included only 100 customers selected through convenience sampling, which may not clearly show weak relationships. Although earlier studies such as Kumar and Petersen (2018) suggest that good service and communication support satisfaction, this study did not confirm that relationship.

The study has limitations. It included customers from one company and one printer brand, used convenience sampling and relied on customer opinions rather than service records. Correlation does not prove that one factor causes another, and percentage analysis only describes how answers are spread. The results should be treated as a guide to areas that Square Tech may need to improve.

CONCLUSION

This study, titled “A Study on Customer Satisfaction towards Hitachi Inkjet Printers and After-Sales Services with respect to Square Tech, Chennai”, examined customer satisfaction with the printers and the company’s after-sales service. Primary data were collected from 100 customers using a structured questionnaire. The answers were analysed using percentage analysis and Spearman rank correlation.

The study found that customer satisfaction was mixed. For many product and service factors, positive and negative views were close. The highest dissatisfaction was for printer quality, ink quality and technical support. Spare-parts availability, service response and service charges also need attention. None of the measured factors had a statistically significant relationship with overall satisfaction.

Square Tech can improve customer satisfaction by improving printer and ink quality, strengthening technical support, keeping spare parts available, making installation and response times more consistent, explaining service charges clearly and collecting customer feedback regularly. These steps may help the company build stronger customer relationships.

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