



# Relationship of the Perceived Service Quality and Customer Satisfaction on Digital Printing Businesses

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## Abstract

The study investigates the relationship between perceived service quality and customer satisfaction among digital printing businesses in Santiago City. The relationship between the demographic profile and customer satisfaction was also examined.

This cross-sectional study is based on primary and secondary data. A sample of 369 respondents who availed of the service at least once from the various digital printing businesses in Santiago City participated in the study. A non-probability sampling technique, specifically quota sampling, has been used in identifying participants for the current study. The researchers used the Pearson correlation coefficient to test hypotheses and provide statistical results.

The study found essential implications on the relationship between the perceived service quality and customer satisfaction in digital printing businesses; the customers perceived all the service quality dimensions, especially the Empathy dimension. Participants are "Very Satisfied" with the service they received rendered by the Digital Printing Businesses. Service quality and customer satisfaction have a moderate positive correlation. The perceived service quality has a weak positive correlation with the participant's demographic profile, except the gender. Customer satisfaction has no significant relationship with the participant's demographic profile.

The study presented an analysis of the relationship between perceived service quality and customer satisfaction among digital printing businesses that would be relevant in increasing the level of satisfaction experienced by the customers. Therefore, there is an essential contribution towards providing best practices for operational efficiency, workflow optimization, and quality control, resulting in improved processes and customer satisfaction.

**Keywords:** Perceived Service Quality, Customer Satisfaction, Digital Printing

## INTRODUCTION

### Background of the Study

Service quality is a measurement of how effectively a provided service satisfies the expectations set out by the customer. Service providers regularly measure the quality of the service they provide for their customers to enhance their services, quickly identify problems, and more accurately measure the level their customers are satisfied with their work. Their satisfaction is classified as customer satisfaction (Ramya, Kowsalya & Dharanipriya, 2019).

Customer satisfaction pertains to satisfaction with a service or product after receiving it. The idea is to meet customers' needs so that they will continue to patronize a business's establishments, enabling that business to increase its revenue and remain competitive in its industry as digital business is booming and growing like a mushroom (Nunkoo, Teeroovengadam, Ringle, & Sunnassee, 2019).

The digital printing industry is still in the primary stage of development and improvement; however, the industry is rapidly developing, and digital printing has an extensive range of use instances, including printing on packaging, printing personalized items, and so on. The digital printing method is rapidly becoming the primary printing process, and its development seems promising in technological advancement (Peng, 2019).

Demirel (2022) addressed the problem in Turkey about how the relationship between service quality dimensions affects customer satisfaction positively. Random sampling has selected four hundred-five people to ensure objectivity and scientific neutrality. The results confirm that all dimensions of digital service quality favor the development of customer satisfaction. Digital service quality and the relationship between customer satisfaction are positive. Businesses should gain credibility for customers and should design their products according



to customer preferences.

Ploysri, Charoensopa, and Sairotrung (2020) investigate and compare factors affecting the services in digital printing establishments, including consumers who received assistance in the digital printing establishments in the Dusit district, Bangkok. The results elucidated that the highest factor affecting the services in digital printing establishments of the target group was the product and reliability, followed by the price, which had a high level of the decision on receiving services.

Armas and Villegas (2017), the researchers determine the different practices of tarpaulin services in Gapan City, Nueva Ecija. Most tarpaulin printing owners are 37-56 years old, male, married, and high school/Bachelor's Degree graduates. This means that education highly participates in the proper management of the enterprise. Having a background, especially in such machines, can be more helpful in managing the business. As to the profile of the enterprises, mainly operating for more than six years, they can be classified as micro-enterprises, employing four to six employees during peak season and less than three workers during the off-season. This means that most respondents can only operate the business in a peak or off-season with a limited number of employees. Those respondents obtain its image in more than six years and continue to maintain and improve its quality service to satisfy its consumers.

The researchers investigated the relationship between perceived service quality and customer satisfaction among digital printing businesses in Santiago City. The relationship between the demographic profile and customer satisfaction was also examined.

### Research Question

This study sought to answer the following questions:

1. What is the perceived service quality of the digital printing business?
2. To what extent is the level of customer satisfaction of digital printing businesses?
3. What is the relationship between perceived service quality and customer satisfaction of digital printing businesses?
4. What is the relationship between the participants' demographic profile and perceived service quality?
5. What is the relationship between the participants' demographic profile and customer satisfaction?

### Significance of the Study

This study investigated the relationship between perceived service quality and customer satisfaction among digital printing businesses in Santiago City. The result of this study would be beneficial to the following stakeholders:

**Digital Printing Business Owners.** The effect of this study will be helpful to this stakeholder in that it will provide them with information concerning how to increase the level of satisfaction experienced by their customers.

**Aspiring Digital Printing Owners.** The study result will benefit this stakeholder by giving insights into market trends, customer preferences, and technological advancements. It helps them identify profitable niches, strategically position their business and make informed decisions regarding equipment and infrastructure investments. The study also provides best practices for operational efficiency, workflow optimization, and quality control, resulting in improved processes and customer satisfaction.

**Customers.** This study's result will benefit this stakeholder as it will give customers insights into service quality in the context of the digital printing industry.

### Conceptual Framework

Service quality (also known as SERVQUAL) is the method to measure customer satisfaction. Service Quality comprises tangibility, responsiveness, reliability, assurance, and empathy (Saliba & Zoran, 2018). The tangibility dimension indicates the Point of sale's overall appearance, employee's appearance, completeness, and modernity of facilities &



equipment in the service center. The service quality dimension, responsiveness, indicates the willingness of employees in the service center to provide prompt service and help customers. The reliability dimension explains the service center's and its employee's ability to perform the promised service accurately, dependably, and on time. The assurance dimension explains the knowledge and courtesy of employees in the service center and their ability to convey trust and confidence to customers. Under the dimension of empathy are indicators of the service center's and its employees' ability to provide carrying and individualized attention to customers and understand customers' specific needs (Tesfaye, 2016). It is necessary as it helps businesses narrow the perceived service quality and customer satisfaction.

The conceptual framework (Figure 1) elucidates the underlying process applied to guide this study. As discussed above, the SERVQUAL model is suitable for measuring perceived service quality and customer satisfaction using the service quality dimensions. In order to know the perceived service quality, customers' service perception will be measured using service quality dimensions. The perceived service quality indicates the level of customer satisfaction. Moreover, the relationship between Perceived Service Quality and Customer Satisfaction indicates the relationship between the two variables to the Demographic profile of the respondents.

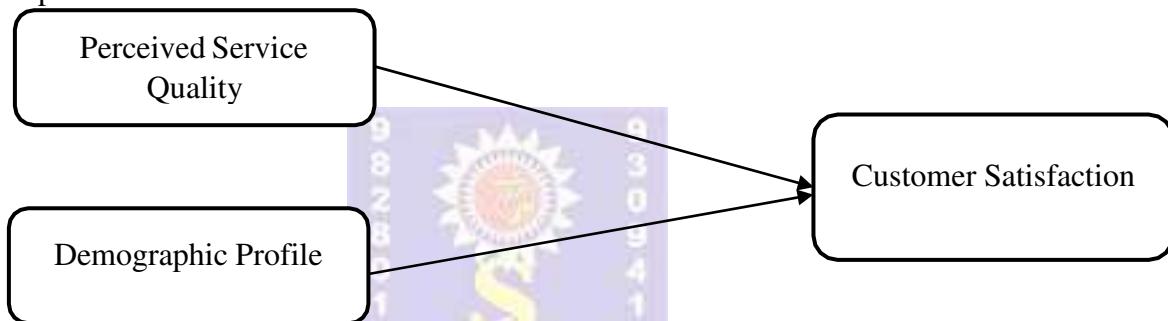


Figure 1. Conceptual Framework

## Literature Review

### Service Quality

Service quality can be defined as a service's capacity to meet the customer's demands. This helps to increase an organization's competitiveness. Businesses may use service quality to enhance their customer services (Gallarza-Granizo, Ruiz-Molina, & Schlosser, 2020).

Service quality is also defined as influencing customer satisfaction and service loyalty. Service quality is a significant input for customer satisfaction (Fadwa, Efendi & Limbong, 2022).

Johnson (2015), on the other hand, stated that having service quality and being responsive to the needs of consumers can directly enhance satisfaction. This measures how satisfied customers are with the overall quality of the services. This can be determined by analyzing the customer's past buying and user behavior about various products, services, brands, and business names.

Shams, Ghazal and Dogaheh (2018). Service quality dimensions with the highest importance to customers were efficiencies, followed by fulfillment, system availability, and privacy. Five quality dimensions – tangibles, reliability, responsiveness, assurance, and empathy – have been used to describe service quality. Different authors have altered the definitions of these variables. Depending on the specific services, different aspects of service quality have different relationships.

### Customer Satisfaction

Customer satisfaction is defined as the Degree of contentment that a customer expresses following the delivery of a service (Hansemark & Albinsson Cao et al., 2018).

Consumer Satisfaction is an estimation that determines how pleased buyers or customers are within organization's items (products), administrations, and capacities. Customer satisfaction



will affect the company and product as well because a happier customer with product quality and service means more products and more profit (Akoi & Yesiltas, 2020)

Customer satisfaction is a crucial concept in modern marketing thought and practice, emphasizing customer satisfaction and obtaining profits in return (Yi & Natarajan, 2018).

In addition, consumer satisfaction is the degree to which their quality of life and well-being is increased. The goal of customer service is redirected from rewarding customers to increasing their satisfaction, which goes far beyond the definition of fulfillment. Happiness reflects a more substantial quality of customer satisfaction. Satisfaction and specific life-related events will maximize customer satisfaction (Sweeney, Danaher, & McColl-Kennedy, 2015).

On the other hand, Copley (2017) stated that consumer satisfaction is a measurement of how satisfied buyers or customers are with a company's products, services, and expertise. Feedback from loyal customers, such as ratings and reviews, can help a business figure out where it stands in the minds of its customers and where it needs to make improvements or introduce new services. Satisfaction is essential to a company's product because it shows how well it meets customer expectations. Customer satisfaction affects business products because satisfied customers with quality and service mean more goods and revenue.

Customer satisfaction is an essential aspect of a company's products and services as it assesses the level of expectation between the product and the customer. In reality, consumer happiness will also affect the business and the goods since satisfied customers about pricing and quality will result in more products and greater profits. According to studies, 99 % of dissatisfied consumers will never purchase a business's goods again; therefore, understanding customer satisfaction is essential for reducing dissatisfied customers and improving profits. If a business does not care about customer happiness, it cannot expect people to care about its offerings (Top & Ali, 2021).

### ***Service Quality and Customer Satisfaction***

Belás and Gabčová (2016) stated that there is a strong correlation between service quality and customer satisfaction, according to various research. Businesses work diligently to achieve high customer satisfaction, particularly those that value long-term customer relations. However, identifying the components of service quality continues to be a topic of research and debate. For instance, customer satisfaction has become crucial in the retailing industry for achieving business success, even though identifying service quality features may not be fully understood.

Travis (2021) also stated that service quality and customer satisfaction had been widely recognized as fundamental drivers in forming purchase intentions. The concepts are essential for companies to gain long-term competitive advantage and retain customers. Several scholarly articles suggest a critical relationship between these two variables, which is also a critical determinant of brand equity.

The satisfaction of customers needs to look into the three dimensions which exhibited positive predictive effects on customer satisfaction. The need to sustain the staff training to be more responsive to the guest's needs must be monitored, and an operational plan may be created for the continuous training and upgrading of their skills. The physical design and layout of the establishment may be carefully planned and assessed with the rules of ergonomics as the industry is not only going green but gearing toward a more straightforward and cozy ambiance for the benefit of its customers. Owners of the establishment may not only endeavor to provide quality products/services and price them higher but need to offer superb quality and justifiably priced items (Adriatico, Razalan, Pagbilao, Afalla, & Dela Cruz, 2022)

Zygiaris, Hameed, Alsubaie, and Rehman (2022) examine the impact of service quality on customer satisfaction in the post-pandemic world of the auto care industry. According to the findings, empathy, reliability, assurance, responsiveness, and tangibles have a significant



positive relationship with customer satisfaction.

### **Tangibility**

Tangibility includes perceiving facilities, buildings, and equipment and seeing the firm's employees. Customers will assess the level of a company's services based on how well-equipped and well-built its buildings and facilities are. Consumers always try to judge a product or service before they buy it. Since they cannot see the service, they base their decisions on everything else that has to do with it (Hasibuan & Setyanugraha, 2021).

Tangibility is a part of service quality seen as very important because it affects how much consumers trust a service provider. This study tried to find out how tangibility affects how people in the telecommunications industry think about the quality of service (Iloka, Eze, & Anukwe, 2022).

Tangibility refers to the appearance of the organization's physical facilities, equipment, and staff. Therefore, businesses use tangibles to convey their picture and the signal quality to customers (Omar, Arifin, & Ahmad 2016).

Tangibility is the extent to which physical facilities, equipment, and staff appearance are appropriate. The modern equipment, well-dressed staff, and physical facilities (Aftab, Sarwar, Sultan, & Qadeer, 2016).

Tangible is one of the features of the service. It refers to products that can be physically touched. In addition, numerous studies define tangibles as physical assets, including materials, equipment, etc. Because customers may value a product based on its appearance or physical form. The product's appearance or design is vital for demonstrating that it can provide a quality service. Also, according to studies, tangibles have the same value as empathy (Pakurár, Haddad, Nagy, Popp & Oláh, 2019).

### **Reliability**

Reliability is the capacity to perform the given service consistently and accurately or to deliver on its claims. This aspect of service quality concentrates on the ability of the service provider to deliver services to the customer as promised, being dependable in handling customer service issues. Performing services well, providing services at the promised time, and keeping customers informed about when services will be performed. It provides a solution to whether the business provides the service correctly the first time and whether it fulfills its commitments promptly as anticipated. Another notion of service reliability is the capacity to deliver the promised services with dependability and accuracy (Zeithaml, Berry, & Parasuraman, 2016).

The reliability of a service places emphasis on the provider's ability to provide it by the agreed terms (Sam, Hamidu, & Daniels, 2018).

"Reliability" is the most important dimension of service quality regarding customer satisfaction. Furthermore, it identifies "Customer Satisfaction" as essential to keeping customers loyal to the organization's services. As a result, it concludes that service quality is the most crucial factor in keeping customers satisfied and loyal (Shrestha, 2021).

Reliability is likened to responsibility and efficiency. In Saudi Arabia's auto care business, many factors also contribute to developing clients' perceptions of service quality and dependability (Omar, Saadan, & Seman, 2015).

Reliability refers to how consistently a method measures something. The measurement is considered reliable if the same result can be consistently achieved using the same methods under the same circumstances (Middleton, 2019).

Reliability means consistently delivering the promised service. The business area guarantees delivery, service arrangement, problem response, and value. Customers want businesses that keep their promises, notably around management results and center help properties. Every business knows clients expect quality (Ali, Saleh, Akoi, Abdulrahman, Muhamed, Noori, & Anwar., 2021)

Reliability is the ability to perform the promised service dependably and accurately. In a



broad sense, reliability means service firms' promises about delivery, service provisions, problem resolutions, and pricing. Customers like to do business with those firms that keep their promises. So, it is essential to the customer's service quality perception and loyalty. Hence the service firms need to be aware of customer expectations of reliability (Ramya, Kowsalya, & Dharanipriya, 2019)

Reliability refers to the efficient attainment of advantage assurance correctly, for example, by giving speedy and safe interactions, a wide variation of items, and opening additional counters during peak time. The greatest thing influencing consumer satisfaction is the speediness of exchange (Janahi & Al- Mubarak, 2017)

### ***Responsiveness***

Responsiveness refers to the institution's ability to provide fast, high-quality service. It requires minimizing the waiting duration for all interactions between the customer and the service provider (Nambisan, Gustafson, Hawkins, & Pingree, 2016.)

Responsiveness is the willingness to help customers and to provide prompt service. This dimension focuses on the attitude and promptness in dealing with customer requests, questions, complaints, and problems. It also focuses on punctuality, presence, professional commitment, etc., of the employees or staff. It can be calculated when customers wait for assistance, answers to questions, etc. The conditions of responsiveness can be improved by continuously viewing the service delivery process and employees' attitude toward the requests of customers (Ramya et al., 2019).

This dimension concerns responding quickly and thoroughly to their client's requests, inquiries, and complaints. In addition, the willingness of the business to assist its clients in receiving good, quality, and swift service is referred to as responsiveness of service. However, when a business interacts with its clients, it is said to be responsive. Companies are therefore expected to approach responsiveness from the perspective of their customers rather than their own (Zeithaml et al., 2016)

The firm's responsiveness is defined as its capacity to offer timely, high-quality service. To achieve this, waiting times for all customer-provider interactions must be minimal (Nambisan et al., 2016).

### ***Assurance***

Assurance refers to the competencies and skills required to provide customer service. Instilling trust and confidence in the consumer, which generates feelings of safety and comfort during service delivery, results from employee abilities and competencies (Wu, Tsai, Hsiung, & Chen, 2015).

Service assurance includes personnel's ability to deliver the service, courtesy and respect for the customer, and efficient customer interaction (Zeithaml et al., 2016).

The assurance dimension is defined as the employee's knowledge, courtesy, and ability of the firm and its employees to inspire trust and confidence in their customers. This dimension focuses on job knowledge, skill, accuracy, and courtesy of employees and security ensured by the firm (Ramya et al., 2019)

Saeed, Xizheng, Abdulwase, and Al-Methali (2021) measure the relationship between service quality and customer satisfaction from customers' perception in Changsha City, Yuelu District. The study showed that all five service quality dimensions positively correlate with customer satisfaction. It also showed that assurance has the most significant factor for customers. This was followed by empathy and then responsiveness.

### ***Empathy***

The characteristic of individualized attention given to clients is referred to as empathy. During the contract, the service providers go above and above to make the customer feel unique and cherished (Bahadur, Aziz, & Zulfiqar, 2018).

The empathy service quality dimension deals with how well businesses treat and attend to each of their clients to make them feel valued and special. Care, approachability, sensitivity,



adequate attention, and an effort to understand the customer's requirements or objectives make up service empathy. Additionally, company employees must show compassion and pay each consumer attention (Zeithaml et al., 2016).

Empathy is a core characteristic of helping and caring interactions and thus is fundamental to service; it leads to improved service quality perceptions and successful sales outcomes (Bove, 2019).

The term "empathy" refers to how a business cares for and pays personal attention to its consumers to make those customers feel especially appreciated and unique. This includes providing access, maintaining communication, and comprehending the client's requirements (Alhkami & Alarussi, 2016).

Empathy attracts customers and convinces them that the market or business is excellent for gratifying them with good loyalty through trust issues. Thus, clients want high-quality items, and it is the business sector's responsibility to make them feel comfortable and loyal (Ali, Saleh, Akoi, Abdulrahman, Muhamed, Noori, & Anwar, 2021).

The empathy dimension is the caring, individualized attention provided to customers by their service firms. This dimension tries to convey the meaning through personalized or individualized services that customers are unique and special to the firm. The focus of this dimension is on a variety of services that satisfy different needs of customers, individualized or personalized services.

(Ramya, Kowsalya, & Dharanipriya, 2019).

Zun, Ibrahim, & Hamid (2018) assess the level of satisfaction among customers and its associated factors using the SERVQUAL (SERV-service, QUAL-quality) instrument in Malaysia. The study showed that the empathy dimension carried the highest mean score for the customers' perception level.

Porsuk and Cerit (2023) study the level of satisfaction among service receivers with their perception after receiving service via the Servqual service quality measurement model. The study showed that the tangibles dimension got the lowest and the Empathy dimension got the highest Servqual dimensionscore among all the scale dimensions.

#### ***Customer Satisfaction and Demographic Profile***

Vijayalakshmi and Rajasekhar (2018) examine the relationship between demographic characteristics (gender and age) and customer satisfaction on online banking service quality factors in India. The study found no significant relationship between demographic factors (age and gender) and satisfaction with some online banking services. Finding results revealed that demography plays a significant role in satisfaction among customers. Income and age proved to be the significant influencers of customer satisfaction.

Pachuau and Zosiamliani (2022) aim to identify the relationship between the demographic profile and customer satisfaction in Aizawl City. The study revealed no significant correlation between the level of satisfaction and gender, age, education level, and marital status. This implies that the demographic profile of customers contributes little to satisfaction upon purchase.

Soujanya and Pilli (2021) study the interaction effect of demographic variables on customer satisfaction towards organized retailing. The study revealed that customer satisfaction is the very key to the success of any business organization. The demographic variables of the customers exert a significant impact on customer satisfaction.

#### ***Perceived Service Quality and Demographic Profile***

Jalagat and Sayari (2021) investigate the relationship between service quality and customer satisfaction in a bank in Oman. It also assesses the impact of demographic variables on service quality. Findings revealed no significant differences in the respondents' perception of both service quality and customer satisfaction when classified according to gender, marital status, educational level, economic status, and source of income.

Kumbhar (2016) focuses on the demographic profile of the customers and its relationship

with the perception of service quality. A statistical result of an empirical study shows that demographic characteristics (except gender) were influencing perceived service quality.

Kalia and Arora (2018) studied whether significant differences in perceived service quality (PSQ) exist within the demographic characteristics of online shoppers, such as education, age, gender, monthly income, occupation, and marital status. The study showed no significant difference in PSQ within different demographic factors.

## METHODS

This section presents the methodology that was used in the study. It comprises research design, site and participants, instrument, data gathering, analysis, and ethical considerations.

### Research Design

A cross-sectional survey design was employed in this study. University of Southern California (2021) stated that cross-sectional designs use survey techniques to gather data. They are relatively inexpensive and take up little time to conduct. Using this research design, you can only use a reasonably passive method to conclude factors based on the findings. The researchers employed this method to assess the level of customer satisfaction offered by the Digital Printing Businesses in Santiago City and to assess the relationship between the level of satisfaction with the service quality and the demographic profile of the participants.

### Study Site and Participants

This study was conducted in the City of Santiago, which is classified as the commercial hub of Isabela. Santiago City is located in the Northern part of Isabela and houses different commercial businesses establishments.

Twenty-eighth digital printing businesses in Santiago City have a total of 4 800 monthly average customers. The participants of this study were the 369 customers of digital printing businesses who availed of the service at least once. The researcher used quota sampling to reach the study's sample size.

**Table 1 Distribution of Participants According to their Demographic Profile**

Age	Frequency	Percent
18-22 yrs. old	10	2.7
23-27 yrs. old	88	23.8
28-32 yrs. old	141	38.2
33-37 yrs. old	70	19.0
38 yrs. old and above	60	16.3
Gender	Frequency	Percent
Male	157	42.5
Female	212	57.5
Educational Attainment	Frequency	Percent
Elementary Undergraduate	-	-
Elementary Graduate	-	-
High School Undergraduate	5	1.4
High School Graduate	53	14.4
College Undergraduate	177	48.0
College Graduate	134	36.3
Civil Status	Frequency	Percent
Single	170	46.1
Married	181	49.1
Widowed	18	4.9

As seen in Table 1, with regard to the age of the participants, 141, or 38.2 percent, belong to 28- 32 years old, 88, or 23.8 percent, belong to the age bracket of 23-27 years old, 70 or 19



percent belong to the age bracket 33-37 years old, 60 or 16.3 percent belong to the age bracket 30 years old and above, and 10 or 2.7 percent belong to the age bracket 18-22 years old. With regard to the gender of the participants, 157, or 42.5 percent, were male, and 212, or 57.5 percent, were female respondents. Of most participants, 177, or 48 percent, were college undergraduates, 134, or 36.3 percent, were college graduates, 53, or 14.4 percent, were High School Graduates, and 5, or 1.4 percent, belonged to High School Undergraduates. Regarding their civil status, 179, or 48.5 percent, were married, 170, or 46.1 percent, were single, and 20, or 9.9 percent, were widowed.

### Research Instrument

The primary source of data was a survey questionnaire. The study utilized the SERVQUAL questionnaire developed by Parasuraman, Zeithaml, and Berry (1988). The questionnaire consists of six sections. The first part is the demographic profile of the participants with four items. The second part is the perceived service quality, and they used a Seven-point Likert scale as a measuring tool (1 - Strongly Disagree, 2 - Disagree, 3 - Somewhat Disagree, 4 - Neutral, 5 - Somewhat Agree, 6 - Agree, and 7 - Strongly Agree). The tangibility, responsiveness, and assurance dimension consist of four items each, while the reliability and empathy dimensions consist of five items each. Zia (2019) Cronbach's coefficient alpha value of 0.6 is considered acceptable for exploratory purposes, 0.7 is considered adequate, and 0.8 is suitable for confirmatory purposes. The value of Cronbach's alpha for tangibility is 0.753; the Reliability dimension has a Cronbach's alpha value of 0.803; the Empathy dimension has a Cronbach's alpha value of 0.832; the Responsiveness dimension has a Cronbach's alpha value of 0.858; and the Assurance dimension has a Cronbach's alpha value of 0.658. All the scale dimensions scored the Cronbach's alpha value ranging from 0.658 to 0.858, which indicates good consistency among all the scale items. The overall value of Cronbach's alpha for all five dimensions is 0.917, which indicates good scale reliability. The third part is the customer satisfaction survey developed by Woodland Joint Unified School District (WJUSD), which consists of 8 questions. They also used a four-point Likert scale to measure (1- Strongly Disagree, 2- Disagree, 3-Agree, and 4- Strongly Agree).

### Data Gathering

The researchers gave a letter to the owner of the business establishment to get the monthly average customer who avails of their service. An attached informed consent to the survey questionnaire was distributed to the participants. The researchers collected the completed survey questionnaires from the participants and checked if all the question was answered thoroughly. The data were entered into Microsoft Excel and safely stored once the survey questionnaires had been collected.

### Data Analysis

The researcher used the means scores and standard deviation of the survey questionnaire results to assess the customers' satisfaction level with the service quality of Digital Printing Businesses in Santiago City. The researchers also use the Pearson correlation coefficient/Chi-square test of independence to determine the relationship between perceived service quality and customer satisfaction, the relationship between the participants' demographic profile and perceived service quality, and the relationship between the participants' demographic profile and customer satisfaction.

### Ethical Considerations

The researchers protect the participant's right to self-determination, anonymity, and confidentiality. For this reason, the participants were given complete information on the nature of the study through written informed consent, distributed with the questionnaire. The data was kept confidential, and the participants were assured of their right to withdraw at any time. The participants' names were not recorded, so all data were rendered. The researchers protected the respondents' rights by ensuring that none of the respondents were named during the research or thesis. Making sure that the respondents were selected to participate without

compulsion and informing the respondents that consent was sought from the management of the selected businesses before the commencement of this research initiative.

## RESULTS

This section presents the data gathered on the perceived service quality and customer satisfaction among digital printing businesses in Santiago City. The research findings aimed to investigate the relationship between perceived service quality and customer satisfaction among digital printing businesses in Santiago City.

### Research Question 1: What is the perceived service quality of digital printing businesses?

The data on the mean, standard deviation, and interpretation of the perceived service quality of the digital printing business are shown in Table 2 below:

**Table 2** Mean, Standard Deviation, and Interpretation of Perception of the Service Quality of Digital Printing Business

Perceived Service Quality	WIKIPEDIA The Free Encyclopedia	M	SD	INTERPRETATION
Tangibility		6.29	0.7	Excellent
Reliability		6.35	0.7540	Excellent
Responsiveness		6.32	0.7350	Excellent
Assurance		6.37	0.7375	Excellent
Empathy		6.39	0.6880	Excellent
Composite Mean		6.35	0.13	Excellent

Note:  $M$  = Mean;  $SD$  = Standard Deviation; Interpretation: 1.00-1.86=Very Poor, 1.87-2.73=Poor, 2.74-3.60=Below Average, 3.61-4.47=Average, 4.48- 5.34=Above Average, 5.35-6.21=Good, 6.22-7.00=Excellent

Table 2 shows most of the participants "Agree" that the perceived service quality was Empathy ( $M=6.39$ ,  $SD=0.6880$ ), Assurance ( $M=6.37$ ,  $SD=0.7375$ ), Reliability ( $M=6.35$ ,  $SD=0.7540$ ),

Responsiveness ( $M=6.32$ ,  $SD=0.7350$ ), and Tangibility ( $M=6.29$ ,  $SD=0.7$ ). With a composite mean ( $M=6.35$ ,  $SD=0.13$ ), this implies that the service rendered by digital printing businesses is excellent. However, there are slight differences in their total mean. The quality of service regarding "Empathy" stands out as the highest, and the quality of service regarding "Tangibility" was the least they perceived.

### Research Question 2: To what extent is the level of customer satisfaction in the digital printing business?

The data on the mean and standard deviation of the level of customer satisfaction of the digital printing business are shown in Table 3 below:

**Table 3** Mean, Standard Deviation, and Interpretation level of customer satisfaction of digital printing businesses

Statements	M	SD	INTERPRETATION
The staff is professional and polite.	3.54	0.50	Very Satisfied
Staff is knowledgeable in their service area	3.53	0.51	Very Satisfied
Staff communicates services offered.	3.63	0.52	Very Satisfied
I am satisfied with the services provided by the business.	3.59	0.52	Very Satisfied
The cost of services is generally reasonable.	3.56	0.53	Very Satisfied
Problems are resolved fairly and quickly.	3.49	0.53	Very Satisfied
Overall, my requests have been completed on time.	3.57	0.50	Very Satisfied
My orders are printed correctly.	3.56	0.53	Very Satisfied
Composite Mean	3.56	0.04	Very Satisfied

Note:  $M$  = Mean;  $SD$  = Standard Deviation; Interpretation: 1.00-1.74 = Very Dissatisfied, 1.75-2.49 = Dissatisfied, 2.50-3.24 = Satisfied, 3.25-4.00 = Very Satisfied

Table 3 shows that most of the participants answered that the staffs communicate the services offered ( $M=3.63$ ,  $SD=0.52$ ); this implies that participants are very satisfied. At the same time, the other participants answered that their problems were resolved fairly and quickly ( $M=3.49$ ,  $SD =0.53$ ), which implies that participants are very satisfied. The data given implies that participants' responses are generally "Very Satisfied" with the service they received rendered by the Digital Printing Businesses ( $M = 3.56$ ,  $SD=0.4$ ).

**Research Question 3: What is the relationship between perceived service quality and customersatisfaction of digital printing businesses?**

Table 4 depicts the relationship between perceived service quality and customer satisfaction in digital printing businesses.

**Table 4 Pearson Correlation Coefficient on the relationship between the Service Quality and Customer Satisfaction of Digital Printing Business**

Variable	WIKIPEDIA The Free Encyclopedia	Customer Satisfaction
Service Quality	.558**	
	p-value	0.001

\*\*. Correlation is significant at the 0.01 level (2-tailed).

A Pearson product-moment correlation was run to determine the relationship between service quality and digital printing business customer satisfaction. There was a moderate, positive correlation between service quality and digital printing business customer satisfaction, which was statistically significant  $r (369) = .558$ ,  $p = < 0.001$ .

**Research Question 4: What is the relationship between the participants' demographic profile and perceived service quality?**

Table 5 depicts the relationship between the participants' demographic profile and perceived service quality.

**Table 5 Pearson Correlation Coefficient on the relationship between the Service Quality and Participant's Demographic Profile**

Variable		Age	Gender	Educational Attainment	Civil status
Service Quality	r	.201**	0.069	.256**	.248**
	p-value	0.001	0.184	0.001	0.001

\*\*. Correlation is significant at the 0.01 level (2-tailed).

A Pearson product-moment correlation was run to determine the relationship between the perceived service quality and the participant's demographic profile. The test revealed that the perceived service quality has a weak positive correlation with age,  $r(369) = .201$ ,  $p = < 0.001$ , educational attainment,  $r(369) = .256$ ,  $p = < 0.001$ , and civil status,  $r (369) = .248$ ,  $p = < 0.001$  which were statistically significant.

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**Research Question 5: What is the relationship between the participants' demographic profile and customer satisfaction?**

Table 6 depicts the relationship between participants' demographic profiles and customer satisfaction.

**Table 6 Pearson Correlation Coefficient on the Relationship between the Customer Satisfaction and Participant's Demographic Profile**

Variable		Age	Gender	Educational Attainment	Civil status
Customer Satisfaction	r	-0.011	0.012	0.097	0.038
	p-value	0.839	0.821	0.062	0.468

A Pearson product-moment correlation was run to determine the relationship between customer satisfaction and the participant's demographic profile. The test revealed that



customer satisfaction has no significant relationship with age,  $r(369) = -.011$ ,  $p = > 0.839$ , gender,  $r(369) = 0.012$ ,  $p = < 0.821$ , educational attainment,  $r(369) = 0.097$ ,  $p = < 0.062$ , and civil status,  $r(369) = 0.038$ ,  $p = < 0.468$  which were not statistically significant.

These findings present the relationship between perceived service quality and customer satisfaction among digital printing businesses in Santiago City, alongside the relationship between the demographic profile of the participants and customer satisfaction. The findings presented will further discuss in the following section.

## DISCUSSION

This study investigated the relationship between perceived service quality and customer satisfaction among digital printing businesses in Santiago City. The relationship between the demographic profile and customer satisfaction was also examined.

The first research question was about the perceived service quality of digital printing businesses. The research findings show that Tangibility, Reliability, Responsiveness, Assurance, and Empathy are the service quality perceived by the customers of digital printing businesses, and the quality of service regarding "Empathy" stands out to be the most they perceived. From the study's findings, it is safe to conclude that empathy is the customer-perceived service quality. Digital printing businesses with this service quality will attract customers and convince them that the business is excellent. Thus, customers want high-quality products, and it is the business's responsibility to make them feel comfortable and satisfied. The result of the study supports the study conducted by Zun, Ibrahim, and Hamid (2018) that the customers the most perceived the empathy dimension. Porsuk and Cerit (2023) state that the Empathy dimension was the most perceived service quality among service receivers with their perception after receiving service, and the Tangible dimension was the least they perceived.

On the other hand, the finding negates with studies by Ploysri, Charoensopa, and Sairotrung (2020) which showed that reliability affected the services in digital printing establishments. Saeed, Xizheng, Abdulwase, and Al-Methali (2021) stated that assurance has the most significant factor for customers. This was followed by empathy and then responsiveness.

The second research question was about customer satisfaction in the digital printing business. The research findings show that participants' responses are generally "Very Satisfied" with the service they receive rendered by the Digital Printing Businesses. In reality, consumer happiness will also affect the business and the goods since satisfied customers about pricing and quality will result in more products and greater profits. The study results in the second research question resonate with the theory of Top and Ali (2021). It is stated that customer satisfaction is an essential aspect of a company's products and services as it assesses the level of expectation between the product and the customer. Akoi and Yesiltas (2020) Customer satisfaction will also affect the company and product because a happier customer with product quality and service means more products and more profit.

The third question is the relationship between perceived service quality and customer satisfaction of digital printing businesses. The research findings show a moderate, positive correlation between service quality and digital printing business customer satisfaction. It implies that all the dimensions of service quality affect customer satisfaction, even though not all the dimensions have an equal impact. The results support the study of Travis (2021), who stated that service quality and customer satisfaction had been widely recognized as fundamental drivers in forming purchase intentions. Zygiaris, Hameed, Alsubaie, and Rehman (2022) stated that service quality (empathy, reliability, assurance, responsiveness, and tangibles) positively correlates with customer satisfaction. On the other hand, the theory of Belás and Gabčová (2016) negates the results of the third research question; it shows that there is a strong correlation between service quality and customer satisfaction, according to various research, and customer satisfaction has become crucial in business for achieving business success, even though identifying service quality features may not be fully



understood.

The fourth research question was the relationship between the participants' demographic profiles and perceived service quality. The study findings provided that the participants' demographic profile and perceived service quality had a weak positive correlation with age, educational attainment, and civil status which were statistically significant. This means respondents' perception of service quality was influenced by their demographic profile when classified according to gender, marital status, educational level, and age. The results support the study of Kalia and Arora (2018) stated that no significant relationship in PSQ within different demographic factors has been found, such as education, age, gender, and marital status. This result needs to be revised in accordance with the study of Kumbhar (2016), which focuses on the demographic profile of the customers and its relationship with the perception of service quality. A statistical result of an empirical study shows that demographic characteristics (except gender) were influencing perceived service quality.

The fifth research question is the relationship between the participants' demographic profiles and customer satisfaction. The study's results also indicate that customer satisfaction has no significant relationship with age, gender, educational attainment, and civil status, which were not statistically significant. This means that customer satisfaction was not influenced by their demographic profile when classified according to gender, marital status, educational level, and age. The result of the study supports the study conducted by Jalagat and Sayari (2021) that there are no significant differences in the respondents' perception of customer satisfaction when classified according to gender, age, marital status, and educational level. Pachuau and Zosiamliani (2022) stated that there is no significant correlation between the level of satisfaction and gender, age, education level, and marital status. This implies that the demographic profile of customers contributes little to the level of satisfaction. On the other hand, the study findings negate the studies of Soujanya and Pilli (2021) stated that customer satisfaction is the key to the success of any business organization and that the demographic variables of the customers exert a significant impact on customer satisfaction.

### Conclusion

This study investigates the relationship between perceived service quality and customer satisfaction among digital printing businesses in Santiago City. The relationship between the demographic profile and customer satisfaction was also examined. The study revealed that the service quality perceived by the customer of digital printing businesses are tangibility, reliability, responsiveness, empathy, and assurance. The service quality they perceived the most was empathy, and the service quality they least perceived was tangibility. Customers are very satisfied with the service rendered by Digital Printing Businesses. The data showed a moderate, positive correlation between service quality and digital printing business customer satisfaction. The perceived service quality has a weak positive correlation with the participant's demographic profile, except the gender. Customer satisfaction has no significant relationship with the participant's demographic profile. The result implied that participants' age, gender, educational attainment, and civil status were not affected by their satisfaction. The study synthesized a moderate, positive correlation between service quality and digital printing business customer satisfaction. Based on that finding, it is recommended that future researchers include the perceived service quality to meet customer satisfaction. Considering different studies about the relationship between digital printing businesses' perceived service quality and customer satisfaction. This study implies that all the dimensions of service quality affect customer satisfaction, even though not all the dimensions have an equal impact on it.

### Recommendations

The findings of this study will serve as a guide for digital printing owners, Aspiring digital printing owners, and customers since the customers perceived all the service quality dimensions, especially the Empathy dimension. Digital printing owners should enhance it to attract customers and convey that the digital printing business is excellent. Empathy should



be given priority to sustain quality service to ensure increased empathy on the part of the customers, which may emphasize actively listening to customers, displaying understanding, and collaboration when problems arise. Digital printing owners must continuously upgrade their present services to meet the customers' needs with the hope of sustaining the rate of customer satisfaction. For aspiring digital printing owners, since there is a moderate, positive correlation between service quality and customer satisfaction, it is recommended that they must have all the perceived service quality when establishing a digital printing business in order to fulfill the satisfaction of their customers. Since perceived service quality has a weak positive correlation with demographic profile except for gender, the demographic variable has no relationship with their perception of customer satisfaction. It may imply that the demographic of participants finds service quality less important. For future researchers, examining the impact of demographic variables may vary from different research sites.

### Limitations and Recommendations for Future Research

One major limitation of this study could be addressed in future research. Some customers declined to answer the survey questionnaire due to their busy schedules. This can result in an incomplete data set, as their perspectives and experiences might be underrepresented. To address this limitation, alternate data collection methods can be implemented. Instead of relying solely on survey questionnaires, make a Google Form survey questionnaire for convenient distribution to the customers so they can answer in their free time.

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