ELECTRONIC CUSTOMER RELATIONSHIP MANAGEMENT SYSTEMS IN E-COMMERCE PLATFORMS: EXPLORING THE ANTECEDENTS OF TECHNOLOGY ACCEPTANCE AND CUSTOMER SATISFACTION

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Abstract

This paper undertakes a comprehensive analysis of the cutting-edge maneuvers in Electronic Customer Relationship Management (e-CRM) in an e-commerce context, encompassing four significant categories: e-CRM, cost, technology acceptance, and customer satisfaction. It also evaluates the construct developments in these four categories. To assess the effectiveness and accuracy of the measurement model, the method of Structural Equation Modeling was utilized. Gathered data from 167 e-commerce sellers in Bandung, the results showed that e-CRM performance relied heavily on the ability of infrastructure, ease of use, and e-learning systems. The development and integration of these factors led to a positive effect on the effectiveness of the e-CRM. In addition, the findings underscored that customer expenses had a favorable influence on customer relationship performance. Consequently, this relationship performance led to an enhancement in the overall effectiveness of the e-CRM in e-commerce. A managerial implication for each category is also provided, along with suggestions for future research and directions.

Keywords: Electronic customer relationship management (e-CRM); cost; technology acceptance; customer satisfaction; E-commerce

JEL Classification: M15, M30, M31

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INTRODUCTION

In today's digital age, the significance of electronic customer relationship management (e-CRM) systems in e-commerce has grown substantially (Kumar et al., 2022). The reason being that customers now have numerous options to choose from when it comes to products and services. By utilizing digital technology, e-commerce businesses can foster better relationships with customers and attain a greater edge in fiercely competitive markets (Pan et al., 2022). As a result, it is crucial for e-commerce entities to prioritize the efficiency of their electronic customer relationship management sys-

tems to enhance service quality and uphold customer loyalty (Zheng et al., 2022). Electronic Customer Relationship Management (e-CRM) is a business strategy that involves using digital technology to build, strengthen, and maintain customer relationships on a large scale (Navimipour & Soltani, 2016). E-CRM is very important for e-commerce businesses because it can help increase customer satisfaction and strengthen their loyalty, as well as help companies to stay in touch with customers and gain valuable feedback. E-CRM enables companies to provide customers with a more personalized and relevant experience by leveraging customer data and their behavior. This helps increase customer retention and reduce churn rates. E-CRM helps increase customer loyalty by facilitating continuous communication between companies and customers (Mokha & Kumar, 2021). It also allows companies to provide special offers and rewards to customers who actively participate in e-CRM programs.

E-CRM also enables companies to manage interactions with customers more efficiently and effectively. By automating most of its processes, companies can reduce operational costs and increase productivity. E-CRM can also help companies gain deeper insight into customer behavior and preferences, which can be used to develop new products and services or improve existing ones. In addition, e-CRM can help strengthen a company's branding by enabling companies to send consistent and relevant messages and information to customers, which helps strengthen brand image and increase customer trust (Yang & Babapour, 2022; Dewi & Ramli, 2023). Innovation is one of the driving forces behind the reduction in costs in many industries today, including SMEs. By embracing new technologies and finding ways to streamline their operations, businesses can drastically lower their production costs (Lee & Shin, 2018). This, in turn, allows them to offer their products or services at a more competitive price point. The rise of the sharing economy, for instance, has been made possible by innovative companies like Uber and Airbnb that have found ways to connect people with underutilized resources, such as cars and spare rooms. These businesses have disrupted traditional industries by introducing new business models that significantly reduce overhead costs. The importance of innovation in reducing costs cannot be overstated, and it is essential for businesses to invest in research and development if they want to remain competitive in today's fast-paced market.

Studying technology acceptance has a significant influence on e-CRM (Electronic Customer Relationship Management) because well-received technology by users will impact the effectiveness and efficiency of e-CRM system implementation. Technology that is positively received will encourage the adoption and more active usage of the e-CRM system by company employees, which in turn enhances customer interactions and effective customer relationship management. A study by Wilson (2019) in research on the Technology Acceptance Model (TAM) states that technology acceptance depends on users' perceptions of usefulness and ease of use. This concept is relevant to e-CRM implementation, where employees who perceive e-CRM as useful in facilitating customer interactions and improving customer relationship management are more likely to accept the technology.

The purpose of this research is to evaluate the efficacy of electronic customer relationship management systems for vendors on E-commerce platforms in Bandung. This will be accomplished by examining the impact of cost, technology acceptance, and customer satisfaction. The significance of this study stems from the fact that assessing the effectiveness of electronic customer relationship management systems can assist E-commerce businesses in Bandung in devising suitable

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strategies to enhance customer satisfaction and customer retention. The results of this research are expected to offer valuable insights and recommendations to E-commerce entities in Bandung, promoting the improvement of their sales services and electronic customer relationship management system efficiency. Moreover, this research could be a contribution to the literature on marketing management and information technology.

LITERATURE REVIEW

Cost and the Success of e-CRM

The implementation of E-Customer Relationship Management (E-CRM) poses challenges to many small and medium-sized enterprises (SMEs) due to the high cost involved in acquiring and maintaining the software, hardware, and infrastructure. Consequently, businesses have to evaluate the return on investment (ROI) before adopting e-CRM. However, research has shown that companies that invest in e-CRM and manage it effectively can benefit from customer retention, increased sales, and better customer satisfaction. Therefore, businesses must consider the cost factor when making decisions about e-CRM investment (Parker et al., 2019). According to Gantz et al. (2019), innovation has a considerable impact on cost. The authors argue that businesses that invest in innovative technologies and processes often reap cost savings in the long run. For example, implementing automation in production processes can decrease labor costs while increasing efficiency. Additionally, innovation can spark the development of new materials or energy sources that are cheaper and more sustainable than previous alternatives. Therefore, incorporating innovation into a company's strategy can have a significant influence on cost, allowing businesses to remain competitive in an ever-changing market. Technical support plays a crucial role in lowering the costs of businesses. According to a study by Navimipour & Soltani (2016) and Sukmawan & Zulganef (2023), infrastructure capability plays a significant role in the acceptance of technology. The study found that organizations with high infrastructure capability were more likely to adopt new technologies compared to those with low infrastructure capability. Zhang & Dhaliwal (2009) in analyzing the relationship between infrastructure capability and technology acceptance suggest that organizations that focus on building strong infrastructure capabilities are more likely to adopt new technologies, which can lead to increased efficiency, productivity, and competitive advantage. This highlights the importance of investing in infrastructure capabilities as a means of facilitating technology adoption in organizations.

H1. Cost has a significant effect of e-CRM.
H1a. Innovation has a significant influence on cost.
H1b. Technical support has a significant influence on cost.

Technology Acceptance on e-CRM

The acceptance and adoption of technology, including e-CRM systems, is influenced by various factors, including perceived usefulness, ease of use, and perceived enjoyment (Venkatesh et al., 2003). Studies have found that technology acceptance has a significant influence on e-CRM adoption and implementation (Abosag et al., 2016). A positive attitude toward technology and high levels of technology acceptance can lead to better e-CRM adoption and implementation, which can result in improved customer service and higher levels of customer satisfaction. Infrastructure capability plays a crucial role in determining the success of technological innovations. According to Rehak et al. (2019), efficient and effective infrastructure is critical in ensuring the usability and effectiveness of new technologies. Studies have shown that the more capable and reliable the infrastructure, the higher the chances of technology acceptance by users. Therefore, organizations should prioritize investing in infrastructure improvements to foster the adoption of new tech-

nologies. The importance of infrastructure in technology acceptance cannot be overlooked since it affects user experience and satisfaction. In addition, infrastructure capability is also important in facilitating communication and collaboration among individuals and organizations (Jamaludin et al., 2022). As stated by Lee (2019), infrastructure such as broadband networks and cloud computing are essential in enabling seamless communication and data sharing, which are crucial in enhancing productivity and innovation. With the increasing reliance on digital platforms and remote collaborations, having a strong and reliable infrastructure is more important than ever. Hence, organizations that invest in infrastructure improvements not only improve the user experience but also gain a competitive advantage in the market.

The development of e-learning systems has brought about a significant impact on the acceptance of technology in business sector. E-learning systems provide a virtual learning environment that is flexible and convenient for learners, thereby promoting technology acceptance. This has led to an increase in the adoption of technology in business, improving the quality of learning outcomes for business sustainability and growth (Sunarya et al., 2023; Tanwari, 2020). Through e-learning systems, learners can access a vast array of tools and resources at any time and from anywhere, promoting a self-paced and self-directed approach to learning. This study highlights the importance of e-learning systems in enhancing technology acceptance in small business sector (Douglas, 2023; Prasetyo et al., 2021). Ease of use is an essential factor that influences the acceptance of a technology. If a technology is user-friendly and easy to operate, it is more likely to be accepted by people (Nugroho et al., 2017). According to the Technology Acceptance Model (TAM), ease of use is one of the significant factors that affect the acceptance of a technology. The model suggests that a technology must be perceived as easy to use and understand to be accepted (Almunawar et al., 2022). Moreover, ease of use affects the user's attitude towards the technology, which leads to its adoption or rejection. Therefore, it is crucial to consider ease of use during the development and implementation of new technologies. Additionally, ease of use is closely related to user satisfaction and overall experience. When users find a technology easy to use, they are more likely to have a positive view of it, which translates into increased satisfaction and continued use. This, in turn, leads to higher productivity and efficiency, a key outcome for any new technology implementation. In fact, research supports the importance of ease of use in technology adoption, as one study found that perceived ease of use was a significant determinant of intention to use mobile health applications (Shroff et al., 2011). Therefore, prioritizing ease of use in technology design should be a priority for businesses and organizations aiming to improve efficiency and effectiveness.

H2. Technology acceptance has a significant influence on e-CRM.
H2a. Infrastructure capability has a significant influence on technology acceptance.
H2b. E-learning systems have a significant influence on technology acceptance.
H2c. Ease of use has a significant influence on technology acceptance.

Customer Satisfaction and e-CRM

The theory suggests that customer satisfaction can lead to increased loyalty and positive word-of-mouth, which in turn can enhance the effectiveness of e-CRM strategies. In line with this, studies have shown that the level of customer satisfaction has a strong correlation with the success of e-CRM initiatives in various industries, including banking, retail, and hospitality (Maroofi et al., 2012; Mansyur, 2021). Therefore, it is important for organizations to prioritize customer satisfaction as a critical factor in their e-CRM implementation, as it can significantly im-

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pact their overall performance and competitiveness in the market (Kaur & Kaur, 2016). Dehghanpouri et al. (2020) stated that customer satisfaction is a crucial factor for the success of e-CRM strategies. Previous research suggests that by improving customer satisfaction, it can lead to increased loyalty and positive word-of-mouth, thus enhancing the effectiveness of e-CRM initiatives (De Matos & Rossi, 2008; Taylor & Hunter, 2002). Several studies have shown that the level of customer satisfaction has a strong correlation with the success of e-CRM in different industries (Feinberg et al., 2002; Huda et al., 2021; Kumar et al., 2022; Sunarya, & Jamaludin, 2022), including banking, retail, and hospitality. Prioritizing customer satisfaction in e-CRM implementation is essential for organizations to improve their overall performance and competitiveness in the market. A better chance of adapting to changes in the competitive landscape and developing new products or services that meet customer expectations. Yet, businesses should also maintain a focus on sustainability in their organizational strategy, as consumers are becoming increasingly aware of the environmental impact of their purchasing decisions (Adnani et al., 2023). By following sustainable practices, businesses can attract customers who value ethical and environmental standards, which can lead to stronger brand loyalty and a competitive advantage. Moreover, a strong and positive organizational culture can create a customer-focused environment where employees are committed to providing superior customer service (Ford et al., 2008; Madhani, 2018). On the other hand, a negative or weak organizational culture can lead to poor customer service, resulting in lower customer satisfaction. Research has shown that companies with a strong culture of customer service have higher customer satisfaction ratings and are more likely to retain their customers (Cao et al., 2018; Rahimi & Kozak, 2017). Customer satisfaction is a crucial factor for the success of e-CRM strategies. The theory suggests that by improving customer satisfaction, it can lead to increased loyalty and positive word-of-mouth, thus enhancing the effectiveness of e-CRM initiatives. Several studies have shown that the level of customer satisfaction has a strong correlation with the success of e-CRM in different industries, including banking, retail, and hospitality. Prioritizing customer satisfaction in e-CRM implementation is essential for organizations to improve their overall performance and competitiveness in the market.

Organizational flexibility is crucial for any company to survive and succeed in today's rapidly changing business environment (Rezaei et al., 2022). It refers to a company's ability to adapt to changes, challenges, and opportunities that emerge in the market. This adaptability ensures that the organization is always ready to meet the needs and demands of its customers. The importance of organizational flexibility cannot be over emphasized, as it has been shown to have a direct impact on customer satisfaction. A recent study conducted by Huynh et al. (2019) showed that companies that are more flexible tend to meet the needs of their customers more effectively, ultimately resulting in increased customer loyalty and profitability. It is therefore essential for organizations to prioritize the development and maintenance of their flexibility as a means of providing customer satisfaction and ensuring sustainable growth.

H3. Customer satisfaction has a significant influence on e-CRM.
H3a. Organizational culture has a significant influence on customer satisfaction.
H3b. Organizational strategy has a significant influence on customer satisfaction.
H3c. Organizational flexibility has a significant effect on customer satisfaction.

The conceptual framework can be shown in Figure 1.

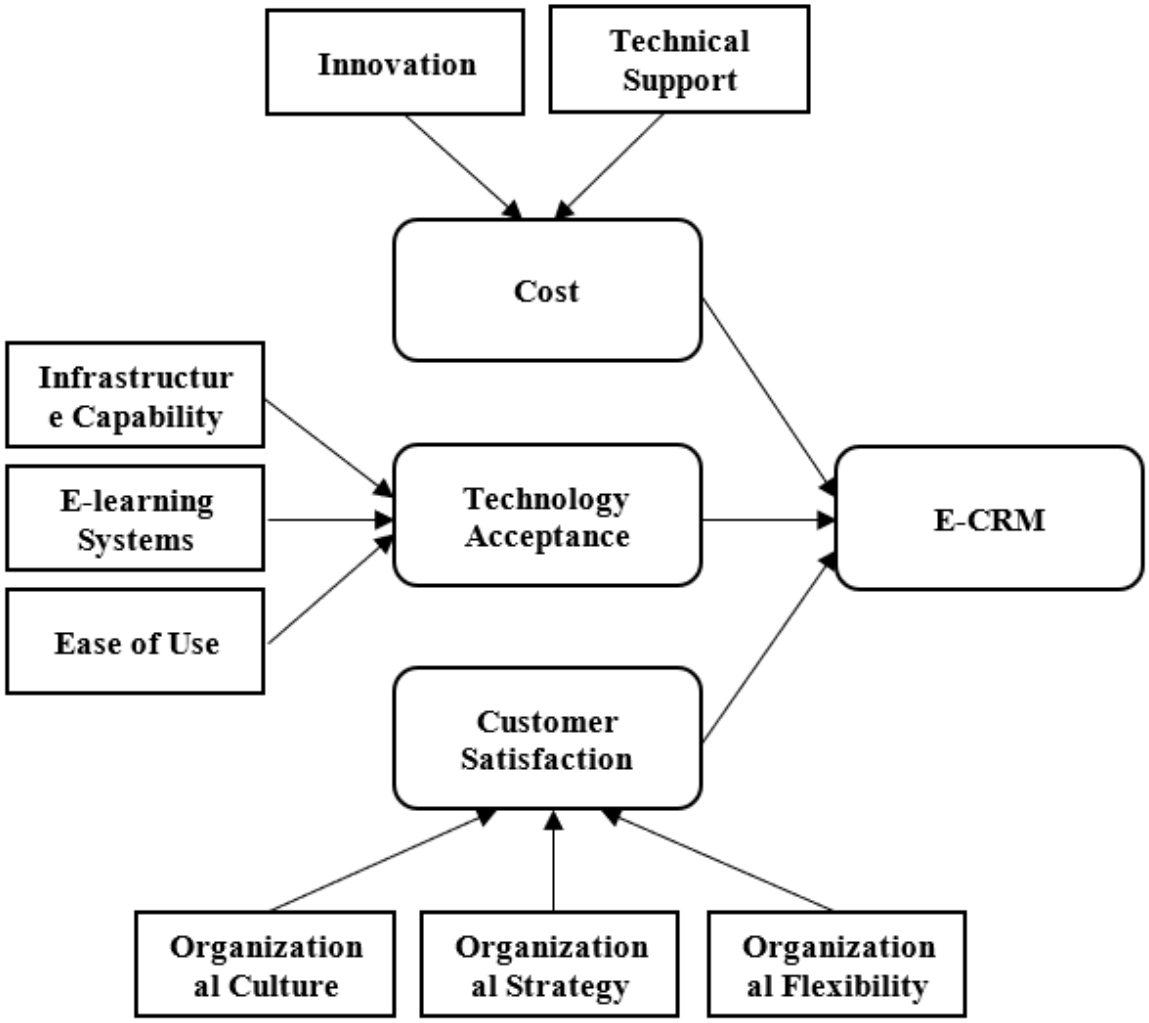

Figure 1. Conceptual Framework

RESEARCH METHOD

The aim of this study is to investigate the effectiveness of e-CRM by analyzing the impact of cost, customer satisfaction, and technology acceptance, through a quantitative approach. To achieve this, the Navimipour & Soltani (2016) model was employed, and a survey was carried out on e-commerce sellers in the Bandung city. The sample size of 167 respondents was selected through a simple random sampling technique, to accurately represent the population of e-commerce sellers in the city. The study was conducted between September and November 2022. According to Bougie & Sekaran (2019), the sample is part of the amount characteristics possessed by the population. Determine that the appropriate sample size is between 100 and 200 (Hair et al., 2021; Hair et al., 2017). It is also explained that the minimum sample size is 5 observations for each estimated parameter and the maximum is 10 observations for each estimated parameter.

Innovation and technical support were used to gauge the cost variable, while ease of use, e-learning systems, and infrastructure capabilities were utilized to measure the technology acceptance variable. To measure customer satisfaction, organizational culture, organizational strategy, and organizational flexibility were evaluated. To measure e-CRM, this study used 5 indicators namely personalization, automa-

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tion, analytics, multichannel integration and customer segmentation. Firstly, personalization refers to electronic customer relationship management (e-CRM) systems allow businesses to personalize interactions with customers through the use of data such as purchase history, preferences, and demographics. This can include targeted marketing campaigns, personalized email communications, and tailored product recommendations. Secondly, automation refers to e-CRM systems automate various customer interactions and communication processes, such as email responses, social media engagement, and online chatbots. Automation helps businessses to respond quickly to customers and provide them with the information they need, while freeing up resources to focus on higher-level customer service activities. Thirdly, analytics refers to e-CRM systems provide businesses with in-depth analytics on customer behavior, preferences, and interactions with the brand. This data can be used to make better business decisions, improve customer experiences, and drive sales. Fourth, multichannel integration refers to e-CRM systems allow businesses to interact with customers through multiple communication channels, including email, social media, chatbots, mobile apps, and more. This provides customers with multiple options for engaging with the brand and allows businesses to reach customers where they prefer to be contacted. Finally, the customer segmentation indicator measures the use of customer segmentation in the e-CRM system to target specific customer groups with relevant communication and offerings.

A questionnaire was deployed to collect data on customer perceptions of the e-commerce sellers in the city, including service quality, customer management, and customer satisfaction. The survey questions were answered using a scale ranging from 1 (strongly disagree) to 5 (strongly agree). This research involved providing around 200 questionnaires to e-commerce sellers. Of the 180 questionnaires returned, 13 were not used due to lacking information, yielding a total of 167 employee questionnaires available for analysis.

The collected data was then analyzed using the SmartPLS statistical analysis technique, which allowed the researcher to evaluate the relationship between the independent variable and the dependent variable, and validate any hypotheses. The PLS method differs from SEM approaches, as it does not rely on assumptions such as multivariate normality and large sample sizes, as noted by Falk & Miller (1992) and Fornell & Bookstein (1982). The PLS method was preferred over other statistical techniques for data analysis in this study, which incorporates constructive elements. With a sample size of 167, there is sufficient scope for PLS estimation procedures.

RESULTS AND DISCUSSION

Result

The demographic characteristics of the respondents were presented in Table 1. The analysis revealed that the majority of the participants were females, which accounted for 116 or 69.46 percent of the total sample. Additionally, the majority of the participants were in their productive age, with the age range of 31-40 years being the most common, with 66 individuals or 39.52 percent, followed by the age group of less than 30 years, with 47 individuals or 28.14 percent. According to their educational background, the majority of the respondents had completed middle school, with 86 individuals or 51.50 percent, followed by those with undergraduate degrees, with 35 individuals. In terms of the length of time the business has been operating, most businesses were in operation for 1-3 years, with 78 units, followed by those operating for 4-5 years, with 42 units.

Table 1. Descriptive Statistics of Respondents

Characteristics	Item	Frequency	Percentage
Gender	Male	51	30.54
	Female	116	69.46
	Total	*167*	*100*
Age	<30	47	28.14
	31-40	66	39.52
	41-50	28	16.77
	>50	26	15.57
	Total	*167*	*100*
Education	Elementary	29	17.36
	Middle school	86	51.50
	Undergraduate	35	20.96
	Graduate	17	10.18
	Total	*167*	*100*
Years of Business	1-3	78	46.71
	4-5	42	25.15
	5-7	32	19.16
	>7	15	8.98
	Total	*167*	*100*

The descriptive statistics as shown in Table 2 provide an overview of the central tendencies and variability in different categories of data. The results serve as a foundation for further analysis, helping to identify areas of strength and potential improvement in the studied variables, such as cost, technology acceptance, customer satisfaction, and E-CRM. The results showed that the variable of cost represents cost-related items, and its mean is approximately 3.84, with a standard deviation of 0.84. This suggests that, on average, the cost items tend to cluster around 3.84, with relatively low variability. The items from the variable of technology acceptance assess technology acceptance, with a mean of around 3.51 and a standard deviation of 0.91. This indicates a moderate level of acceptance, with some variability in responses. Moreover, customer satisfaction items exhibit a range of means, from 2.94 to 4.11, with standard deviations ranging from 0.73 to 1.26. This implies varying levels of satisfaction across different aspects, with some being more consistent than others. Lastly, electronic customer relationship management (E-CRM) items have a mean ranging from 3.20 to 4.05, with standard deviations generally below 1. This suggests that, on average, E-CRM components are moderately rated, with limited variability.

The first analysis was to examine

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loading factor for the antecedents of exogenous variables. Loading factors is to identify the extent to which the different variables in a data set contribute to the variation of the data. In other words, loading factors indicate how strongly a variable is correlated with a particular factor or underlying construct in a data set. Figure 2 showed the full model of PLS-SEM estimation. Moreover, Table 3 demonstrated the loading factors for the indicators of Cost variable.

The results showed that the cost indicators' loading factors indicated that innovation's IN1 had a loading value of 0.901 and VIF of 2.820, while IN2 had a loading value of 0.918 and VIF of 2.905, and IN3 had a loading value of 0.859 and VIF of 1.199. The loading factor for technical support (TS1) was 0.936 with a VIF of 2.488, whereas TS2 had a loading factor of 0.947 and a VIF of 2.488.

The findings as shown in Table 4 indicated the loading factors of the technology acceptance indicators, and revealed that all of the factors leading to technology acceptance, such as infrastructure capability, e-learning systems, and ease of use, had a loading factor above 0.7. Moreover, the function of VIF was also examined to identify which independent variables in a multiple regression model are highly correlated with each other and to quantify the extent of multicollinearity. By detecting multicollinearity, VIF can help to improve the accuracy and reliability of the regression analysis, as well as the interpretation of the coefficients.

The results for the analysis of loading factors for customer satisfaction showed that all items have acceptable loads. The results also revealed the acceptable values for VIF (Variance Inflation Factor) as a statistical measure used in Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the level of multicollinearity in the data, with a commonly used threshold for acceptable VIF values is 5 or less (Table 5).

The results showed that all variables had acceptable loads of above 0.7 (Table 6). Moreover, the results confirmed the value of VIF stands for Variance Inflation Factor, and it is a measure of multicollinearity between two or more independent variables in a multiple regression model. Multicollinearity occurs when there is a high correlation between the independent variables, leading to unstable and unreliable results from the regression analysis.

Moreover, Table 7 showed that all constructs were valid and reliable, indicated by the convergent validity and reliability for measurement model were acceptable. Convergent validity is a type of validity that assesses how well a measure correlates with other measures that are theoretically or conceptually similar. The function of convergent validity is to confirm that a measure is measuring the same construct as other established measures, and to demonstrate that the measure is reliable and accurate. The testing showed that Cronbach's Alpha, rho_A, Composite Reliability, and Average Variance Extracted (AVE) all have the values above 0.7.

Furthermore, model fit summary in Structural Equation Modeling (SEM) was performed as a statistical technique that evaluates the overall fit of the model to the data. In Partial Least Squares (PLS) SEM, the model fit summary is used to assess the adequacy of the model in explaining the observed data. The results showed that all indices were fit (Table 8), indicated by similar values of Saturated Model and Estimated Model.

Table 2. Descriptive Statistics of Indicators

Variable	Items	Mean	Std. Dev
Cost	IN1	3.84	0.84
	IN2	3.73	1.01
	IN3	3.68	1.09
	TS1	3.52	0.73
	TS2	3.57	1.24
Technology Acceptance	IC1	3.84	0.91
	IC2	3.39	0.83
	ES1	3.36	0.79
	ES2	3.36	0.84
	ES3	3.31	0.91
	EU1	3.20	0.83
	EU2	3.15	0.79
	EU3	4.08	1.17
Customer Satisfaction	OC1	2.94	0.73
	OC2	4.11	1.01
	OC3	3.84	0.83
	OS1	3.73	1.02
	OS2	3.68	0.97
	OS3	4.09	1.26
	OF1	2.98	0.80
	OF2	3.06	0.93
	OF3	3.57	0.78
E-CRM	ECRM1	3.81	0.86
	ECRM2	3.20	0.78
	ECRM3	3.51	0.83
	ECRM4	3.80	0.79
	ECRM5	4.05	1.29

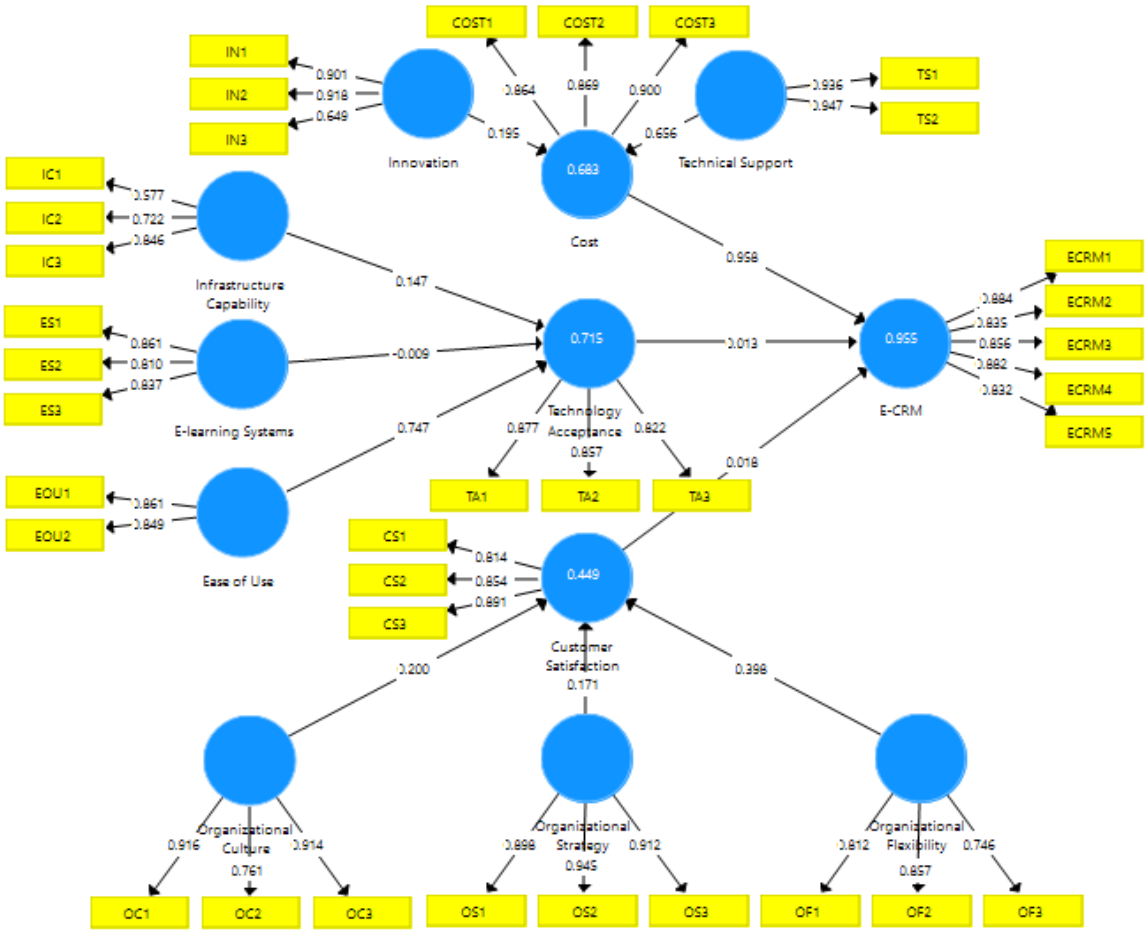

Figure 2. PLS Calculate Result

Table 3. Loading Factors of Cost indicators

Items	Innovation	Technical Support	VIF
IN1	0.901		2.820
IN2	0.918		2.905
IN3	0.859		1.199
TS1		0.936	2.488
TS2		0.947	2.488

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Table 4. Loading Factors of Technology Acceptance Indicators

Items	Infrastructure Capability	E-learning systems	Ease of use	VIF
IC1	0.861			1.867
IC2	0.817			1.313
ES1		0.824		1.703
ES2		0.889		1.867
ES3		0.954		1.313
EU1			0.921	1.703
EU2			0.823	1.867
EU3			0.854	1.313

Table 5. Loading Factors of Customer Satisfaction Indicators

Items	Organizational Culture	Organizational Strategy	Organizational Flexibility	VIF
OC1	0.916			2.727
OC2	0.761			1.512
OC3	0.914			2.654
OS1		0.898		2.665
OS2		0.945		4.060
OS3		0.912		3.057
OF1			0.812	1.867
OF2			0.857	1.313
OF3			0.746	1.703

Table 6. Loading Factors of Variables

Indicators	Cost	Customer Satisfaction	E-CRM	Technology Acceptance	VIF
Innovation	0.864				1.989
Technical Support	0.869				2.015
Organizational Culture		0.814			1.712
Organizational Strategy		0.854			1.768
Organizational Flexibility		0.891			2.276
Personalization			0.884		3.010
Automation			0.835		2.213
Analytics			0.856		2.500
Multiple integration			0.882		2.790
Customer Segmentation			0.832		2.200
Infrastructure Capability				0.877	1.925
E-learning systems				0.857	1.789
Ease of use				0.822	1.681

Table 7. The Convergent Validity and Reliability of the Measurement Model

Constructs	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Cost	0.851	0.852	0.910	0.770
Customer Satisfaction	0.814	0.819	0.889	0.728
E-CRM	0.910	0.913	0.933	0.736
E-learning Systems	0.792	0.822	0.875	0.700
Ease of Use	0.632	0.632	0.844	0.731
Infrastructure Capability	0.529	0.549	0.763	0.523
Innovation	0.767	0.811	0.868	0.692
Organizational Culture	0.833	0.867	0.900	0.751
Organizational Flexibility	0.750	0.830	0.848	0.650
Organizational Strategy	0.907	0.909	0.942	0.844
Technical Support	0.872	0.878	0.940	0.886
Technology Acceptance	0.812	0.818	0.888	0.727

Table 8. Model Fit Summary

Indices	Saturated Model	Estimated Model
SRMR	0.077	0.077
d_ULS	0.471	0.471
d_G	0.143	0.143
Chi-Square	239.726	239.726
NFI	0.681	0.681

Table 9 presents the results of direct hypothesis testing for the relationship between variables examined in this study. The findings indicate that Cost has a significant direct effect on e-CRM with an Original Sample coefficient of 0.958, which is higher than the Sample Mean of 0.956, and P value of 0.000. In line with this argument, a study conducted by Demirel & Danisman (2019) found that firms that integrate innovation into their business strategies tend to have a more significant market share and higher profits. Therefore, investing in innovative technologies and processes can provide businesses with a competitive advantage, promote economic growth, and enhance their bottom line significantly.

Technical Support also has a significant direct effect on cost with an original sample coefficient of 0.656, a sample mean coefficient of 0.641, and P-value of 0.000. According to a study conducted by accenture, outsourcing technical support can reduce costs up to 40% (Nuseir et al., 2022). These cost savings can be attributed to the efficient handling of technical issues that lead to improved productivity, less downtime, and reduced maintenance costs. Technical support also helps in identifying potential problems and resolving them before they escalate, leading to even more savings. This demonstrates how technical support can significantly influence cost management in businesses, making it a vital aspect of any organization's operations.

The findings showed that customer satisfaction is found to have a significant direct effect on e-CRM with an original sample coefficient of 0.818, a sample mean coefficient of 0.820, and p-value of 0.002 (Table 9). This is consistent with previous studies. One study that supports this notion was conducted by Chi (2021) who investigated the impact of e-CRM on customer

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satisfaction and loyalty in the Vietnamese banking industry. Also, Navimipour & Soltani (2016) revealed that customer satisfaction positively influences the effectiveness of e-CRM, leading to increased repurchase intentions and positive word-of-mouth. Therefore, organizations that prioritize customer satisfaction in their e-CRM strategies are likely to reap the benefits of increased loyalty and positive customer feedback (Khanh et al., 2022).

Moreover, organizational culture also allows companies to stay ahead of their competitors. The results found statistically significant effect of organizational culture on customer satisfaction with T-statistic value of 1.996 and p-value of 0.034. It is therefore crucial for organizations to cultivate a culture of flexibility and openness to change, which can lead to long-term success and profitability. Overall, organizational flexibility is a critical factor for companies to thrive in today's dynamic business environment. Furthermore, organizational flexibility has a significant direct effect on customer satisfaction with an original sample coefficient of 0.398, a sample mean coefficient of 0.424, and p-value of 0.000. In today's hyper-competitive market, the ability to quickly adapt to changing trends and emerging technologies can make a huge difference in a company's success. For instance, companies that are quick to adopt new technologies and adjust their strategies accordingly are more likely to gain a significant competitive advantage. On the other hand, companies that are rigid and resistant to change are at risk of being left behind. This is consistent with previous research which has shown that organizational flexibility has a significant effect on customer satisfaction. A study conducted by Huynh et al. (2019) found that companies that were more flexible in their operations were more likely to satisfy their customers' needs, leading to increased customer loyalty and profitability. Therefore, it is important for organizations to focus on developing and maintaining their flexibility to ensure customer satisfaction.

Organizational strategy has a significant direct effect on customer satisfaction with T-statistic value of 1.985 and a low p-value of 0.000. This showed that an effective organizational strategy must also adapt to changes in the market and customer preferences. Businesses need to regularly evaluate their strategy and make necessary adjustments to ensure that they remain competitive and relevant. The rapid growth of technology and increasing globalization has also created new challenges and opportunities for businesses (Zameer et al., 2015). These developments have affected the way businesses interact with their customers and the way they operate. Therefore, businesses must invest in their organizational strategy to stay ahead of the curve and meet customer expectations. The findings showed that by investing in their organizational strategy, businesses can develop a clear direction for their operations and align their goals with market fluctuations and customer demands (Jamaludin, 2021).

Finally, technology acceptance is found to have a significant direct effect on e-CRM with an original sample coefficient of 0.383, a sample mean coefficient of 0.384, and p-value of 0.001. This showed that the hypothesis was accepted. This is consistent with previous studies which found that technology acceptance has a significant influence on e-CRM adoption and implementation (Abosag et al., 2016). Mokha & Kumar (2021) also found that a positive attitude toward technology and high levels of technology acceptance can lead to better e-CRM adoption and implementation, which can result in improved customer service and higher levels of customer satisfaction.

E-learning systems has been found to have a significant impact on the technology acceptance with T statistic value of 2.118 and p-value of 0.006. According to a study by Rhodes & Lohr (2021), e-learning systems have shown to be effective in increasing access to technology for SMEs.

The study found that e-learning can increase business opportunities for small business who may otherwise have limited access to traditional forms of resources. Additionally, e-learning has the potential to enhance the quality of growth, reduce costs, and increase flexibility in business.

Moreover, ease of use has been found to have a significant impact on the technology acceptance with T-statistic value of 4.116 and p-value of 0.000. This showed that ease of use is more likely to increase the acceptance of technology. This is empirically supported by previous studies. According to Pai & Alathur (2019), perceived ease of use is a significant determinant of intention to use mobile health applications. Therefore, prioritizing ease of use in technology design should be a priority for businesses and organizations aiming to improve efficiency and effectiveness.

Infrastructure capability has been found to have a considerable impact on the acceptance of technology with an original sample coefficient of 0.147, which is higher than the Sample Mean of 0.152, and P value of 0.024. The availability and efficiency of infrastructure are essential in enhancing the usability and efficacy of technological innovations. The more capable and reliable the infrastructure, the higher the likelihood of the technology acceptance by users. Hence, organizations need to invest in improving their infrastructure capabilities to foster the adoption of new technologies. This finding is supported by various studies conducted in the field of technology acceptance (Awa et al., 2015; Chauhan, 2015; Chen et al., 2017; Hu et al., 2019).

Discussion

The results suggest that the variables are crucial in enhancing the performance of an organization. For instance, effective cost management can lead to better customer relationship management, and high levels of technical support can contribute to cost optimization. Similarly, the study shows that enhancing customer satisfaction and organizational flexibility can lead to better e-CRM performance (Al-Bashayreh et al., 2022). Furthermore, the findings indicate that organizations should strive to improve technology acceptance to increase e-CRM performance. Overall, the study highlights the importance of these variables in improving organizational performance in the context of e-CRM.

Table 9. Hypothesis Testing

Hypothesis	Original Sample (O)	Sample Mean (M)	T-Statistics (|O/STDEV|)	P-Values	R Square	Decision
Cost -> e-CRM	**0.958**	**0.956**	**8.659**	**0.000**	**0.683**	**Accepted**
Innov. -> Cost	*0.210*	*0.209*	*2.115*	*0.008*	-	Accepted
Tech. Sup. -> Cost	*0.656*	*0.641*	*5.801*	*0.000*	-	Accepted
Cust. Sat. -> e-CRM	**0.818**	**0.820**	**3.566**	**0.002**	**0.449**	**Accepted**
Org. Cul. -> Cust. Sat	*0.240*	*0.243*	*1.996*	*0.034*	-	Accepted
Org. Flex -> Cust. Sat	*0.398*	*0.424*	*4.252*	*0.000*	-	Accepted
Org. Stra. -> Cust. Sat	*0.205*	*0.207*	*1.985*	*0.036*	-	Accepted
Tech. Acc -> e-CRM	**0.383**	**0.384**	**5.509**	**0.001**	**0.715**	**Accepted**
E-learn. Sys -> Tech. Acc.	*0.719*	*0.717*	*2.118*	*0.006*	-	Accepted
Ease of Use -> Tech. Acc.	*0.747*	*0.746*	*4.166*	*0.000*	-	Accepted
Infra. Cap. -> Tech. Acc.	*0.147*	*0.152*	*2.272*	*0.024*	-	Accepted

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Overall, the study's results indicate that the majority of the hypotheses tested have a significant relationship between the independent variables and dependent variables. Specifically, the results show that cost has a strong relationship with e-CRM, technical support has a significant impact on cost, and customer satisfaction is positively related to e-CRM, organizational flexibility, and technology acceptance. The findings suggest that companies with more investment in improving their technological infrastructure and support services are more likely to increase customer satisfaction and reduce costs (Alzoubi et al., 2022; Jie et al., 2015; Li et al., 2021; Saputro & Utomo, 2023). Furthermore, the study highlights the importance of organizational culture and strategy in influencing customer satisfaction. The results of this study could help organizations in developing effective strategies to enhance customer satisfaction and increase their competitiveness in the market. Zhang et al. (2022) denoted that by investing in these areas, organizations can ensure that their technology adoption process is smooth and efficient, ultimately leading to positive results for the business.

Furthermore, customer satisfaction is widely recognized as a key factor for the success of e-CRM strategies. According to various studies, improving customer satisfaction can lead to enhanced customer loyalty and positive word-of-mouth promotion. This, in turn, can increase the effectiveness of e-CRM initiatives in different industries such as banking, retail, and hospitality (Lambert & Enz, 2017). Therefore, prioritizing customer satisfaction in e-CRM implementation is essential for organizations to improve their performance and competitiveness in the market. In this regard, organizational strategy plays a crucial role in determining customer satisfaction in any business. A well-planned and executed organizational strategy can help a company meet its customers' needs and exceed their expectations. It involves identifying and implementing processes and procedures that prioritize customer service, product quality, and timely delivery. On the other hand, a poorly executed organizational strategy can lead to dissatisfied customers, decreased sales, and a tarnished reputation. Therefore, businesses must prioritize the development and implementation of an effective organizational strategy to achieve long-term success and customer satisfaction. Organizational flexibility is the ability of a company to adapt to changes in the business environment. It is important for a company to have organizational flexibility to meet the evolving needs of their customers.

The cost factor plays a crucial role in the adoption and implementation of e-customer relationship management (e-CRM) by businesses. The high cost of acquiring and maintaining e-CRM software, hardware, and the necessary infrastructure is a significant barrier for many small and medium-sized enterprises (SMEs). For this reason, companies must carefully evaluate the return on investment (ROI) of e-CRM before deciding to implement it. Research has shown that companies that invest in e-CRM and manage it effectively can benefit from improved customer retention, increased sales, and better customer satisfaction. Therefore, it is essential for businesses to consider the cost factor when deciding to invest in e-CRM. However, it is equally important to understand that adopting e-CRM can help businesses achieve long-term success by building stronger relationships with customers. With the right strategy and implementation, e-CRM can lead to improved customer engagement and increased loyalty, which can translate into increased revenue and profitability. In addition, e-CRM can provide valuable insights into customer behavior and preferences, enabling businesses to tailor their marketing and sales efforts to better meet the needs of their customers. Therefore, while the cost of implementing and maintaining e-CRM may be high, it is

important for businesses to weigh the potential benefits against the cost and make an informed decision based on their unique needs and goals.

CONCLUSION AND RECOMMENDATION

The findings of the research indicate that the efficiency of the electronic customer relationship management system for e-commerce sellers in Bandung city is positively and significantly influenced by factors such as cost, acceptance of technology, and satisfaction of customers. The study provides empirical evidence of the significant role of cost, technology acceptance, and customer satisfaction in enhancing the effectiveness of e-CRM systems. This suggests that a comprehensive e-CRM strategy should take into account these factors the study highlights the importance of understanding customer behavior and preferences in the context of e-commerce. This is crucial because satisfied customers are more likely to purchase more frequently from e-commerce sellers, leading to increased revenue and profitability. The research underscores the value of technology acceptance in enhancing e-CRM effectiveness. This suggests that e-commerce sellers need to invest in training and support to ensure that their employees and customers are proficient in using e-CRM tools.

The study contributes to the broader literature on e-CRM by highlighting the importance of cost in determining the success of e-CRM systems. This suggests that e-commerce sellers need to carefully consider the costs associated with implementing and maintaining e-CRM systems, and identify ways to optimize their investment in these systems. Overall, the findings of this study provide valuable insights that can help e-commerce sellers to develop more effective e-CRM strategies, and to better understand the factors that drive success in digital customer relationship management. The practical implications of this research suggest that e-commerce sellers in Bandung city should invest in an effective electronic customer relationship management system to improve their efficiency. This includes considering the cost of implementing and maintaining the system, as well as ensuring that the technology is accepted and adopted by the sellers and their staff. Additionally, the satisfaction of customers should be a priority, as it has a direct impact on the efficiency of the system. E-commerce sellers should aim to provide high-quality customer service and ensure that their electronic customer relationship management system facilitates smooth and effective communication with customers. By implementing these practices, sellers can improve their competitiveness and potentially increase their customer base and revenue.

As managerial implications, organizations should prioritize the development of their infrastructure capabilities to ensure they are well-equipped to adopt new technologies. Infrastructure capabilities encompass various areas, including hardware, software, telecommunications, and human resources. Additionally, infrastructure capabilities can promote innovation within organizations, as more advanced technologies can be leveraged to improve processes and create new products or services. Overall, infrastructure capability is a crucial factor in technology acceptance and should be considered a strategic priority for organizations seeking to remain competitive in a rapidly-evolving digital landscape. Moreover, e-learning systems have the potential to bridge the gap in access to technology, especially for SMEs. With the internet, small business can access the same knowledge and resources. This creates equal opportunities and promotes business growth. It is, therefore, important for institutions to invest in e-learning systems to improve access to small business and promote technology acceptance in internet commerce sector. The results also denote the

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importance of ease of use in technology adoption which cannot be overstated. Ease of use has a direct impact on user satisfaction and overall experience. When users find a technology easy to use, they are more likely to have a positive view of it, which translates into increased satisfaction and continued use.

This study has some limitations. This study limited customer adoption to e-commerce sellers. The study also did not take into account of data security issue and integration challenges faced by small business, such as the supply chain which can be complicated and time-consuming. For future research, it is expected to explore personalization of e-commerce CRM. For instance, future research can focus on developing more personalized experiences for customers, using advanced technologies such as artificial intelligence and machine learning. Future studies can be conducted to identify the factors that contribute to customer engagement with electronic CRM systems and how it can be improved. Also, with the rapid advances in technology, future research can examine the potential of emerging technologies such as chatbots, virtual assistants, and augmented reality in enhancing electronic CRM. As social media has become a significant source of customer interaction, integrating electronic CRM with social media can be an exciting area of research.

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