

## **Synergy Relationship between TQM and Knowledge Management to Create Customer Value Perceptions**

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### **Abstract**

Total quality management (TQM) has been trusted by many quality-oriented companies in the world in order to improve performance in terms of customer value. However, studies on the implementation of TQM and knowledge management in relation to customer value are still very few. The main aim of this research is to understand how customer's perceived value is influenced by TQM and knowledge management. A literature review was conducted to identify key TQM and knowledge management practices and the concept of customer value.

This study adopted a cross-sectional design with a quantitative approach to test the research model. Data was collected using the survey method by distributing questionnaires online and sent using their respective e-mail addresses and using the business WA group. Based on a survey of service sector business actors, the PLS estimation approach is used to achieve research objectives and test hypotheses.

The empirical results show that TQM has a positive signaling effect on knowledge management and customer value perceptions. In addition, it was found that knowledge management has a significant effect on customer value perceptions.

This study was limited to the food service sector in Bali, Indonesia and a cross-sectional design was used to examine the hypothesized relationships at one point in time. The research model developed can add insight to knowledge by practitioners and policy makers and the basis for making critical policies in the future. The paper addresses the gap in the literature by analyzing the relationship between TQM and knowledge management in the process of strengthening customer value perceptions.

**Keywords:** total quality management, knowledge management, customer value perception

### **1. Introduction the problem**

Responding to intense competition and pressure, sustainability is an important concern for practitioners and academics today. Organizations and companies in general must pay special attention to strategies and processes that ensure continued success and excellence over time. The value that can be offered to customers is the key to sustainable advantage. Focus on customer value is very important for the restaurant industry like in Indonesia, to gain a sustainable competitive advantage. The restaurant industry is an important component in society, as an

important constituent of several sectors in the world (Thielemann, Ottenbacher, & Harrington, 2018).

In Indonesia, the restaurant business is a supporter of the economy. Companies contribute to the creation of new jobs, facilitate innovation, support the creation of jobs that support the economy. However, the company experienced difficulties in starting and expanding marketing. A common problem faced is that owners start a business without adequate marketing access that supports business failure and profits (Cronin-Gilmore, 2012). It can be explained, the successful implementation of the marketing strategy will be able to increase the overall customer value (Arslanagic-Kalajdzic, Žabkar, & Diamantopoulos, 2019).

Why is customer value important? Customer value is important in making purchasing decisions. Quality implementation is defined as a set of tools, strategies defined as strategic keys used by company management for higher quality performance. The factor of rapid technological development, changing preferences and needs, increasing competition, makes it increasingly difficult for organizations to maintain a sustainable competitive advantage. The focused marketing strategy adopts the concept of customer value which effectively improves business performance (Nasution, Mavondo, Matanda, & Ndubisi, 2011).

Thus, the aim of this research is to develop a model that provides a better understanding of how companies create better customer value perceptions through total quality management (TQM). Specifically, the research question that this study seeks to answer is given that delivering customer value has grown to be a primary business objective rather than generating profits which value should be communicated and delivered to meet and even exceed customer expectations, how can organizations create and offers greater value every day from TQM practices and their combinations.

To meet customer needs and offer customer value, companies can utilize TQM strategies. The implementation of TQM is related to the company's operational continuous improvement activities for economic sustainability (Mele, 2007). TQM describes a quality-centered organizational management approach with the aim of long-term success through customer satisfaction. The emphasis is on several principles: customer focus, leadership, employee involvement, process approach to resources, continuous improvement (Ueno, 2010). Ultimately, TQM should help develop a better value proposition for customers.

Empirical support for a significant and positive relationship between TQM practices and customer value is corroborated in previous research ((Wang, 2015; Tseng & Wu, 2014). However, other studies have found no support for process management and training as dimensions of TQM on service value. Thus, companies must undertake TQM practices so as to strengthen knowledge management for high customer value perceptions. However, empirical studies on how a company actually changes TQM practices to deepen knowledge management and perceived value are still few.

Therefore, this study explores the perception of customer value through TQM practices, and proposes that construction recombination contributes to increasing customer value. Based on this and previous literature, this study aims to determine how companies develop knowledge management (KM) so as to create superior customer value perceptions.

## **2. Theoretical background and hypothesis development**

This study uses a resource-based view of theory (Barney, 1991), as a basis for thinking in discussing TQM and knowledge management (Qasrawi, Almahamid, & Qasrawi, 2017). According to Clulow (2007) the ability to understand how organizations succeed in creating and sustaining competitive advantage is fundamental in the field of strategic management (Clulow, Barry, & Gerstman, 2007). According to the human resource-based view (RBV), different firm performance is caused by different pools of resources and different capabilities as a source of competitive advantage. RBV focuses on internal-level analysis of a company's strengths and weaknesses.

Therefore, companies must develop knowledge management competencies to develop, grow, advance and offer competitive customer value. Literature search found that basically TQM creates and implements knowledge management to strengthen customer value perceptions. As an extension of the RBV, signal theory describes how TQM and knowledge management as hidden signals that may not be observed (by the customer) affect the customer's perceived value. This research seeks to develop a research conceptual framework and install a set of external signals that customers can perceive such as reputation, prestige and better customer-company relations (Arslanagic-Kalajdzic et al., 2019).

### *2.1 The direct effect of TQM practices on customer value*

In today's competitive market, achieving superior customer value is an important criterion for the sustainability of an organization (Pinho, 2008). Customer value is defined as an assessment of customers' perceived preferences and their efforts to rank product characteristics, service/product feature performance, and the consequences of results that lead to customer goals. Customer perceived value refers to subjectivity, personal and interactive feelings derived from pleasure, comfort, functionality and product/service experience (Mele, 2007). In an effort to stay competitive, many companies have looked at how the TQM practice approach can be effective for achieving goals. TQM proponents have asserted that if TQM is properly implemented, it can lead to the perception of value by customers. Despite the fact that some studies talk about quality failures, most of the studies show the contribution of TQM to the successful achievement of customer perceived value (Kalajdzic, 2017). Based on the literature review, the hypothesis can be formulated as follows:

H1: TQM has an effect on service quality.

### *2.2 The influence of TQM on knowledge management*

A previous empirical review on quality shows various quality management systems have been attempted to achieve performance. TQM proponents assert that if TQM is implemented correctly, TQM can lead to company goals. TQM as a tool that helps various organizations maintain high quality standards for products and or services that facilitate the acquisition and sharing and application of knowledge (Qasrawi et al., 2017). TQM practices such as teamwork, leadership, information and analysis enable knowledge management processes with the ability to create, acquire and utilize knowledge which are key strategic factors for sustainable competitive advantage (Honarpour, Jusoh, & Nor, 2012). The concept of TQM as a set of practices to satisfy customers encourages companies to be more open and close to the environment which ultimately

strengthens the activities of capturing knowledge, identifying, storing it effectively embedded in the organization and disseminating and utilizing it in service processes, products so as to gain competitive advantages over competitors (Yusr, Mokhtar, Othman, & Sulaiman, 2017).

H2: TQM influences knowledge management.

### *2.3 The effect of knowledge management on customer value perceptions*

Knowledge related to understanding the company needed to meet current and future customer needs and preferences. Knowledge can be obtained through interaction and dialogue to gain knowledge regarding new demands for products and services. Tseng's research (2014) with manufacturing manager respondents in Taiwan shows how a company's ability to utilize customer knowledge affects the company's relationship with customers and can increase customer value. Observation activities, analyzing data and information are useful in providing services that are tailored to preferences and building long-term company-customer relationships (Tseng, 2014). Hence, if a company can figure out how to manage knowledge, efficiently integrating knowledge management will offer superior individualized service at every customer touchpoint (Salojärvi, Saarenketo, & Puumalainen, 2013).

Based on a review of relevant literature, this study found that knowledge management can be turned into a source of sustainable competitive advantage, which consists of managing, gathering knowledge, sharing and applying knowledge into valuable and competitive activities for organizations (Ozkaya, Droge, Hult, Calantone, & Ozkaya, 2015) means that the company's capability to continue to create, distribute, and use knowledge is very important for companies to create customer value perceptions (Wahyuni, Sara, & Amerta, 2019).

H3: Knowledge management influences perceived service value.

### *2.4 The mediating role of knowledge management*

TQM practices have been researched by Samat (2006) where TQM practices include: management commitment and support, training and education, employee engagement, continuous improvement, quality policy, supplier partnerships, product/service design, quality-related information communication, and customer satisfaction orientation (Samat, Ramayah, & Mat Saad, 2006). The definition of quality management is a comprehensive philosophy that contains a set of key components that are very important in supporting the successful perception of value by customers (Ueno, 2010). Total quality management can be understood externally from the market, or internally from the organization (Pinho, 2009). Quality management is able to hone the ability to generalize knowledge, seek, disseminate and utilize knowledge across members of the organization (Aboyyassin, Alnsour, & Alkloub, 2011). Thus TQM together with customer knowledge management enhances the customer's perceived value. Therefore the following hypothesis is proposed:

H4: Knowledge management positively and significantly mediates the relationship between TQM and customer value.

### **3. Research Methods**

#### *3.1 Study population, sampling and data collection*

The research population consists of employees and managers who work in restaurants. Data was collected in Denpasar City and Badung Regency, Bali to test the above hypothesis through a questionnaire. These two areas were selected as research locations for the reason that they are the regions with the most home-based food industries in the Bali region, Indonesia. Most of the questionnaires were distributed via the internet in early April 2022. The research population was based on restaurant/restaurant businesses registered in the Directory of the Bali Provincial Tourism Office (Bali Government Tourism Office) in 2022, as many as 1278 restaurants.

To capture information from restaurant employees and managers, they are invited to take part in a survey. The survey questionnaire and request letter explaining the purpose of the research were sent to the companies, and to find out which companies practice TQM processes, knowledge management, and customer perceptions of service value. Electronic mail (email) survey approaches and digital applications are used to obtain data, with reasons for geographic reach, and low administrative costs. This study adopts a quantitative approach research methodology to collect primary data. Quantitative data is collected, and four hypotheses must be tested, thus the quantitative method is the most practical and appropriate approach in this study. The quantitative method with a positivism view approach was chosen in this study on the grounds that the positivism paradigm is related to the nature of reality to achieve an objective, definite and therefore measurable understanding of management and business phenomena. This study carefully considered questions of questionnaire design such as order, wording, and appearance (Nasution et al., 2011).

#### *3.2 Measurement development*

After developing the research model, the construct was operationalized by reviewing the existing previous literature. Specifically, this research examines the relationship between total quality management (TQM), knowledge management and customers' perceived value. TQM and knowledge management are predictor variables and customer value perceptions are outcome variables. That said, this study investigates whether this relationship is fully or partially mediated. In this study, all questionnaires were adopted from existing measures. The relevant items underlying each construct are then identified. The survey instrument was developed in consultation with qualified academics and experts (Anil & K.P, 2019). A series of interviews with senior managers and academics were conducted to assess the external validity of the model. After the interview with each senior manager was completed, the results were collated, transcribed and emailed to the respondent for review. It is hoped that they will provide a richer and more holistic appreciation of the problems associated with the research model.

The research instrument measures research variables, so that data consisting of numbers can be analyzed based on statistical procedures. The questionnaire instrument was designed and developed based on extensive and in-depth literature related to research so that research results and findings can be generalized and applied. To ensure a high level of validity and reliability, the definition of the construct, the reference source instrument was adopted from previous studies.

Consequently, the reliability and validity of TQM, knowledge management and customer value perceptions were confirmed (Table I).

To measure perceptions of TQM, knowledge management, and service value, respondents were offered a questionnaire. Likert scale with a range of 1=strongly disagree, to 5=strongly agree. The research instrument was designed based on the literature on TQM, knowledge management and customer value. All measures are based on an assessment of what the respondent feels, perceives and believes.

Prior to data collection, the questionnaire was validated by a number of professors and experts in this research domain working at public and private universities in Bali. This study used human participants, so the questionnaire was approved by the Head of the University Research Institute. The questionnaire was revised to reflect comments and suggestions received from academics and practitioners. The draft questionnaire was tested by scholars and experts which led to some minor modifications in the wording of some of the survey items. All multi-item variables were measured on a five-point Likert-type scale from 1=strongly disagree to 5=strongly agree.

Furthermore, the total quality management measures developed by Qasrawi (2019) were adopted in this study including leadership, customer focus, process management, teamwork, and employee involvement. Then, the knowledge management measure developed by Tseng (2014; (Aboyassin et al., 2011), adopted in this study consists of: knowledge acquisition, knowledge dissemination, and knowledge application. Knowledge management indicators include (Chong, Chong, & Gan, 2011) (Yusr, 2017): acquisition, dissemination, storage, and utilization of knowledge about a) customers, b) suppliers, c) competitors, and d) emerging market trends. And, customer value perceived by customers has been adopted in research from previous research (Nasution et al., 2011; Kalajdzic, 2017) including reputation, prestige, and relationship quality. The company's reputation felt by customers reflects the overall evaluation of the company based on reactions to the totality of company activities. The credibility of the company that is felt by customers in this case is intended as the respondent's perception that the company has the knowledge and ability to fulfill what is claimed. The quality of the relationship in this study reflects the overall strength of the relationship between companies and their customers.

### *3.3 Methods of data analysis*

Finally, due to its exploratory nature, this study uses PLS estimation to maximize the explanation of variance in the dependent construct of the structural equation model. The analysis followed the recommendations (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014) for PLS modeling.

## **4. Discussion**

### *4.1 Analysis of validity and reliability*

Table I presents the criteria used to evaluate reliability and validity. The results of the PLS analysis show the reliability criteria of indicators (eg factor loadings, Cronbach's alpha and composite reliability as well as average variance extracted (AVE). Cronbach's alpha value for all indicators is more than 0.70 which indicates the reliability of the construct used. Meanwhile, the composite reliability value shows a number above 0.70 representing reliable items. As

shown in Table 1, the construct's AVE value is above 0.50 which indicates that the validity of the convergent validity can be accepted. The results of this study indicate that all factor loadings are greater than 0.60, meaning that all loadings are acceptable (Wang and Chung, 2013). Meanwhile, as shown in Table 1, composite reliability (CR) shows all scales are above 0.70. In addition, the measurement items of each construct are closely related to the underlying construct. Validity is indicated by the AVE value of the key constructs (TQM, knowledge management and customer value perceptions).

Latent construct	Number of items	Cronbach's alpha	Composite reliability	AVE
Total quality management (TQM)	7	0,893	0,916	0,609
Knowledge management	3	0,879	0,925	0,805
Perceived customer value	4	0,856	0,903	0,699

Source: primary data, processed (2022).

*4.2 Structural model*

The path coefficient between total quality management and perceived positive customer value is statistically significant at the chosen significance level of 5 percent. It can be interpreted that TQM practices such as leadership, customer focus, process management significantly and positively facilitate long-term relationships with consumers so as to provide increased customer value perceptions. The research results are in line with previous studies (eg Pinho, 2009; Kalajdzic, 2017). Likewise, at a significance level of 5 percent, the path coefficient between total quality management and knowledge management is positive and statistically significant. The results of the study found that TQM showed a significant positive effect on knowledge management, H2 was supported.

This indicates that a company's tendency to explore quality management significantly makes a positive contribution to knowledge management by seeking, storing and then utilizing knowledge. The results of this study support previous studies (eg. Yusr, 2017). Furthermore, the path coefficient between knowledge management and perceived customer value is positive and statistically significant at the 5 percent significance level, supporting H3. This finding is in line with previous research (Tseng, 2014; Ozkaya, 2015), which reflects that the ability to find, utilize, and apply knowledge to meet customer needs and expectations supports companies in strengthening high customer value perceptions.

Finally, the mediating effect of knowledge management shows an indirect effect of the relationship between TQM and customer value perception through knowledge management with positive and statistically significant results. The results showed a significant positive mediating effect ( $\beta=0.290$ ;  $p<0.05$ ) on the relationship between TQM\_perceptions of customer value. This

research answers previous concerns which ultimately provides an explanation of how TQM practices reinforce the practice of seeking, distributing, storing and using knowledge to increase the company's prestige and reputation in the minds of customers.

Table 2. Construct, manifest variable and factor loading

Manifest variables and constructs		Loadings	t-value	Keputusan
<b>Total quality management</b>				
TQM1	Leadership	0,834	16,872	Sig.
TQM2	Focus on customers	0,745	16,708	Sig.
TQM3	Teamwork	0,830	16,879	Sig.
TQM4	Process management	0,747	28,114	Sig.
TQM5	Employee engagement	0,772	14,167	Sig.
TQM6	Information and analysis	0,757	18,050	Sig.
TQM7	Strategy development	0,772	28,690	Sig.
<b>Manajemen pengetahuan</b>				
AP	Knowledge acquisition	0,922	48,262	Sig.
DP	Knowledge dissemination	0,882	44,194	Sig.
APP	Knowledge application	0,887	33,738	Sig.
<b>Persepsi nilai pelanggan</b>				
NP1	Credibility	0,832	23,212	Sig.
NP2	Reputation	0,774	20,293	Sig.
NP3	Prestige	0,892	46,010	Sig.
NP4	Relationship quality	0,843	25,950	Sig.

## 5. Conclusion

This paper is unique in the sense that, for the first time logically in the context of the literature, it provides a meaningful model that helps the restaurant sector to have customer-oriented performance as guided by previous models. From the model there is a relationship between TQM and knowledge management on customer value perceptions. This relationship is supported by the resource-based view theory which asserts that organizational performance is actively determined by the company's internal resources and capabilities. This assertion is based on empirical facts that companies can obtain superior performance from a customer perspective by utilizing their resources effectively and efficiently.

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