

## The Impact of Total Quality Management on Corporate Performance in Malaysian Public Listed Companies

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### Abstract

Total Quality Management (TQM) is a holistic approach that focuses on meeting needs and expectation of customers through the involvement of all organizational functions and individuals for continued improvement. It is widely accepted as a mean of sustaining competitive advantage. However, the review of performance-related TQM literature shows that researchers have different approaches in conceptualization of performance measures and inconclusive about the positive impact of TQM on corporate performance. Therefore, this study aims to examine the effect of TQM practices on corporate performance, both financial and nonfinancial performance. The empirical data had been drawn from 132 human resource managers in Malaysian public listed companies and analysed using the multiple regression analysis. Finding of this study revealed that TQM has a positive impact on corporate performance across five measure practices, which are, top management leadership, human resource management, customer focus, strategic planning, and information and process management. The major implication of the finding is that the positive impact of TQM on corporate performance is not limited only to Malaysia manufacturing companies, but also be equally achieved across sectors in Malaysia public listed companies.

**Keywords:** Total quality management; Corporate performance; Malaysian public listed companies.



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### 1. Introduction

Total quality management (TQM) is internationally recognised as a management philosophy that widely accepted as a mean of sustaining competitive edge in the global market. In Malaysia, TQM has been widely implemented and become a prominent benchmarking model for many firms, evidenced by yearly prestigious awards given to organisations such as Quality Management Excellent Award (QMEA) and the Malaysian Prime Minister Quality Award (PMQA) (Amin *et al.*, 2017; Zakuan *et al.*, 2009). Various literature found on TQM had established the existence of a positive relationship between the effective implementation of TQM with regards to innovation performance (Long *et al.*, 2015; Prajogo and Sohal, 2006), employee's job satisfaction (Ooi *et al.*, 2007), customer satisfaction and quality and operational results (Winn and Cameron, 1998), financial performance (Brah *et al.*, 2000; Douglas and Judge, 2001; Escrig-Tena, 2004; Kumar *et al.*, 2009; O'Neill *et al.*, 2016; York and Miree, 2004). In opposition to these, Psomas and Jaca (2016), Sila (2007) and Demirbag *et al.* (2006) found weak or indirect relationship between TQM and financial performance. This implies that researchers have different approaches in conceptualization of performance measures and presents contradictory findings. It is hard for researchers to compare amongst the contemporary studies and to conclude the relationship between TQM and corporate performance.

In addition to that, inappropriate performance measurement would actually hinder the attempts to implement TQM (Sinclair and Zairi, 1995). Čater and Čater (2009) and Chen *et al.* (2004) posit that solely employed financial measurement systems have been criticized for being backward looking and inadequate for assessing performance. The limited capturing the contribution of TQM in financial performance might give deceptive signals about corporate performance (Kaplan and Norton, 1992). In fact, financial and nonfinancial performance measures are complimenting and supporting each other. Therefore, by considering this issue, this study employs corporate performance that incorporates financial and nonfinancial performance to enable the company gain knowledge and insights into the contribution of TQM as well as understand how to practice it.

Specifically, a review of the TQM in Malaysia shows that many researchers focused on industry-specific studies such as TQM in the electric and electronic (Abdullah *et al.*, 2008; Abdullah and Tarí, 2017), automotive (Zakuan *et al.*, 2009), manufacturing (Lau and Idris, 2001), small- and medium-sized manufacturing (Long *et al.*, 2015), which are more concerned with producing tangible products. In order to develop a generalised framework of TQM practices and impact, this study extends research in the area of total quality management for Malaysian public listed companies in various industries which are hotel, finance, trading and service, technology, consumer products, industrial products, construction, plantation and properties industries. Malaysian public listed companies in various industries were chosen as they are large in size. Larger firms are more likely to implement TQM than small firms do

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as they have faith that TQM implementation can generate significant and more benefits than outweigh implementation cost (Kumar *et al.*, 2009; Powell, 1995).

## 2. Literature Review

### 2.1. Total Quality Management

Total Quality Management (TQM) became prevalent in academic and business literature without canonical definitions. The notion of TQM has been defined in different ways by different authors. Based on the various definitions proposed by different researchers (Demirbag *et al.*, 2006; Kumar *et al.*, 2009; Oakland, 2003; Prajogo and McDermott, 2005), major common characteristics can be extracted, which are, individual involvement, customer needs and expectation, and continuous improvement. Hence, in this study, TQM is defined as a holistic approach that focuses on meeting needs and expectation of customers through the involvement of all organisational functions and individuals for continued improvement.

Although much has been written about what constitutes the philosophical pillars of TQM, there is no consensus in the literature in term of dimension and application of TQM. Researchers have constituted different number and priority of the TQM's dimension (Harrington *et al.*, 2012). Based on the review of performance-related TQM literature (Brah *et al.*, 2000; Demirbag *et al.*, 2006; Douglas and Judge, 2001; Harrington *et al.*, 2012; Psomas and Jaca, 2016; Saraph *et al.*, 1989; Sila, 2007; Terziovski and Samson, 1999; Winn and Cameron, 1998), top management leadership, human resource management, customer focus, strategy planning, information and analysis, and process management are receiving the highest coverage in the articles reviewed and have contributed to improving performance. In this study, these dimensions have been used to determine the effect of TQM on corporate performance.

### 2.2. Total Quality Management and Corporate Performance

In regards to the relationship between TQM and corporate performance, numerous studies provide empirical evidence that firms implemented TQM performed financially better than average in term of sales growth, profitability, revenue growth, and return on assets (ROA) (Brah *et al.*, 2000; Demirbag *et al.*, 2006; Douglas and Judge, 2001; Powell, 1995; Sila, 2007). Whilst, Kumar *et al.* (2009), Zakuan *et al.* (2009), Sila (2007), Demirbag *et al.* (2006), Brah *et al.* (2002), Terziovski and Samson (1999), Winn and Cameron (1998), Chenhall (1997) and Powell (1995) found support in their study for the relationship between implementations of TQM practices and non-financial performance such as new product/service development, capacity to develop a unique competitive profile or competitive position, market development, satisfactory level, overall performance.

In relation to the above, top management leadership plays an important role in improving corporate performance. Top management are absolutely essential in setting strategic directions and building a leadership system that would facilitate organisational performance and learning as well as individual development (Brah *et al.*, 2002; Terziovski and Samson, 1999). They responsible for quality and inspiring employees to provide a total, willing, and voluntary commitment to achieve organisational goals (Goetsch and Davis, 2010; Tarí *et al.*, 2007). Furthermore, top management can nurture strong relationship with customers by encouraging the employees to obtain and understand the detailed information about customer needs and requirements, as well as involving customers in designing products and thus increases their satisfaction and retention (Brah *et al.*, 2002). Chenhall and Langfield-Smith (2007) revealed that high customer satisfaction will lead to the improvement of customer loyalty, positive word-of-mouth advertising, and good reputation of the company, in turn, improve financial performance.

As advocated by Sila (2007), human resource management of TQM includes employee involvement, employee empowerment and training are positively affects employee employee satisfaction, absenteeism, commitment, motivation and individual performance, and thus affects company performance, productivity and competitiveness. This view is supported and extended by Sebastianelli and Tamimi (2003) who noted that training in process improvement such as the basic tools and techniques of quality, related skills and involving employees in decision-making and soliciting their ideas and knowledge for improving processes will contribute to improving process management. Moreover, empower the employees to adopt their processes to environmental changes are better able to use TQM for competitive advantage (Douglas and Judge, 2001).

As regards to information and analysis, the detailed information about customers' needs and requirements are effectively disseminated and understood throughout the organization would nurture a strong relationship with customers and therefore increases their satisfaction and retention (Brah *et al.*, 2002). Availability and accessibility of key information allow employees to use data about their work processes for continuous improvement (Hussain *et al.*, 2004). This point of view is further explained by Demirbag *et al.* (2006). Who stated that decisions regarding quality improvement are made based on data and information. Overall, Terziovski and Samson (1999), provided empirical evidence that firms consistently collect, sort of and analyse information will be outperformed than those do not.

Towards fulfilling the satisfaction of the customer, the role of customer focus construct should be strongly emphasised on TQM implementation. This construct also emphasises the communication with customers (MBNQA (Malcolm Baldrige National Quality Award), 2010), customer services, efforts to become integrated with customers such as partnering and involving customers in the organisation's internal processes (Easton and Jarrell, 1998). Customer feedbacks are used to improve the organisational processes and operations accordingly and therefore improve products and services (Tarí *et al.*, 2007). The customer related information is useful to improve current processes and identify opportunity for innovation (Brah *et al.*, 2002; Terziovski and Samson, 1999).

Apart from that, strategic planning sets the base for top management for its action plans of operational delivery methods by defining the mission, policies, and strategies in the organisation (Brah *et al.*, 2002; Jung and Hong, 2008). Rakich (2000) revealed that involve and empower employees in strategic planning and implementation would enhance their acceptance of the strategic plan and commitment to implement as well as motivation to achieve the results. Strategic planning that incorporate customer requirements in defining strategies and planning has an effect on customer focus and result (Brah *et al.*, 2002). Phan *et al.* (2011). describe strategic planning as a critical for achieving superior product quality by creating the environment and direction for continuous quality improvement.

Furthermore, the effectiveness of process management has an impact on financial performance. For instance, a company can increase the return on assets by reducing process variation, waste, and increasing the efficiency. In addition, lower cost structure of a company due to the reduced rework and less scrap would increase productivity. This allows the company to offer lower prices than their competitors and increase profit, market share, and sales (Kaynak, 2003; Sila, 2007). It is supported by York and Miree (2004). who stated that quality improvement leads to reduction of cost associated with poor quality, rework, warranties, and in turn improves financial performance. Whilst, Sadikoglu and Zehir (2010). advocated that effective process management practices could improve the non-financial performance, includes job satisfaction, job commitment, and pride of workmanship of employees, as well as the satisfaction of customers. Continuous quality improvement can also be achieved through the efforts of increasing production quality, reducing process variation, and regular preventive equipment maintenance. These efforts can lead to the competitive priorities in cost reduction and fast delivery for the company (Kaynak, 2003; Tarf *et al.*, 2007).

### 3. Methodology/Materials

This study employed a quantitative approach. In this study, TQM is considered as multidimensional construct but operationalised as single construct as the relationship is not so clear if the TQM concept is separate into different dimension and their effects are evaluated separately or individually. All the Malaysian public listed companies built up the population of this study to ensure that the companies surveyed are large in size. It is because larger and sophisticated companies believe that they are more familiar with TQM and tend to have greater effect on operational performance than smaller firms (Kumar *et al.*, 2009; Terziovski and Samson, 2000). The unit of analysis in this study was the Malaysian public listed companies of which the respondents are the head or manager of Human Resource (HR) from each company. Since TQM is involving all employees and departments, the senior managers or heads of human resource department are adequate. As they are directly involved in the organisational process and management and have knowledge of past and present organisational practices pertaining to quality management and corporate performance.

Questionnaire were distributed to 260 HR managers in Malaysian public listed companies. Systematic sampling technique with sampling intervals of 2 was used to draw samples from the list of companies in fourteen sectors on the main market of Malaysia Bourse. TQM embodies five criteria, namely top management leadership, HRM, customer focus, strategic planning, and information and process management. Corporate performance has been measured on the basis of several criteria, namely growth of sales, profit, revenue, after-tax return on assets, after-tax return on sales, industry leadership, future outlook, the success rate in new products or services, satisfaction index of staff and customers, achievement on performance target, the overall respond to competition, business performance and practice. Perceptual data were used in which respondents were asked to evaluate the corporate's performance relative to the key competitor in the industry in the last 5 years.

## 4. Results and Findings

### 4.1. Demographic Information of Respondents

A total of 142 questionnaires were returned, yielding 54 percent of response rate. However, 10 questionnaires were discarded from further analysis due to large missing data and outliers. The demographics of respondents had been illustrated in Table 1.

**Table-1.** Demographic Information of Respondents

<b>Industry</b>	<b>Frequency</b>	<b>Percent</b>
Finance	13	9.8
Technology	12	9.1
Hotel	1	0.8
Trading and Service	24	18.2
Consumer Products	22	16.7
Industrial Products	26	19.7
Construction	9	6.8
Plantation	11	8.3
Properties	14	10.6
<b>Department</b>	<b>Frequency</b>	<b>Percent</b>
Human Resource / Administration	121	91.7
Others	11	8.3
<b>Position</b>	<b>Frequency</b>	<b>Percent</b>
Managers	84	63.6
Executives	42	31.8
Others	6	4.6
<b>Length of Service</b>	<b>Frequency</b>	<b>Percent</b>
< 2 years	45	34.1
2 ≤ years ≤ 5	29	22.0
5 < years ≤ 10	23	17.4
10 < years ≤ 15	16	12.1
15 < years ≤ 20	14	10.6
> 20 years	5	3.8
<b>Number of Employees</b>	<b>Frequency</b>	<b>Percent</b>
≤ 99 employees	24	18.2
100 – 299 employees	31	23.5
300 – 499 employees	17	12.9
500 – 699 employees	13	9.8
700 – 999 employees	9	6.8
1000 – 1499 employees	12	9.1
1500 – 2000 employees	6	4.5
> 2000 employees	20	15.2

Based on Table 4.1, the results clearly indicate that most of the respondents were from human resource department including human capital and administration department who represent 91.7 percent. The rest of the respondents work in other departments such as marketing, corporate, affairs, finance, operation and production. The majority of the respondents who answered the questionnaire were managers (head, senior managers, managers, assistant managers) who account for 63.6 percent. Managers account for the highest percentage of the sample because they are the main target group to answer the questionnaire. The manager position for some of the companies was empty during the data collection period, executives were chosen to answer the questions, representing 31.8 percent of total respondents. However, about 4 percent of them did not indicate their position. In terms of length of service of the respondents in these companies, the respondents were first asked to respond to the questionnaire only if they served in their current company for at least a year. Hence, the participated respondents have at least a year of employment with their current company and were eligible to participate in the questionnaire survey (Nazari *et al.*, 2011).

## 4.2. Factor Analysis Results

Factor analysis was used to test the construct validity of all the variables in the research questionnaire and group and reduces a vast number of variables to an appropriate and interpretable set of factors (Sekaran, 2003). Principle components analysis (PCA) paired with a varimax rotation was employed to minimise the number of variables that have high loadings on TQM construct. This is because varimax is the most common orthogonal rotation scheme that simplifies the interpretation of factors (Field, 2009; Pallant, 2016). The acceptable result of total quality management after eight trials prior to all the criteria of factor solution is shown in Table 2. The Kaiser-Meyer-Olkin (KMO) value is 0.894 and the Bartlett's test of sphericity value achieved statistical significance. The five factors in this table with eigenvalues exceeding 1 explained 70 percent of variance in TQM.

The first factor consists of six items of Strategic Planning and two items from the original questionnaire were excluded because of cross-loading and low factor loading significance. The second factor comprised of two items from Process Management and four items from Information and Analysis. This factor reflected process management and information issues, and thus was labeled as Process and Information Management. The third factor retrieved five items from Top Management Leadership in the original questionnaire and no items was recommended to be deleted. The fourth factor comprised only two items from Human Resource Management and other three items from the

original questionnaire were excluded. The fifth factor consisted of two items from Customer Focus and three items were omitted. Based on the results, it was decided that only five factors were retained in this study.

**Table-2.** Factor Analysis Results on Total Quality Management

Factor/ Variable	Item No.	Questionnaire Items	Factor Loading
Strategic Planning	SP2a	Our organisation's strategic plans and policies are incorporated: a) customers' requirement,	0.853
	SP2b	b) suppliers' capabilities,	0.836
	SP2c	c) staffs' capabilities,	0.867
	SP2d	d) and needs of stakeholders including communities.	0.839
	SP5	Our organisation's business operations are effectively aligned with the organizational mission.	0.489
	SP1	Our organisation regularly sets and reviews organizational short and long-term goals through a comprehensive planning process/strategic action plans.	0.484
Process Information Management and	PM3	Our organisation has programs to determine and reduce wasted time and costs in all processes.	0.806
	IA2	Our organisation's quality data (various charts that describe SPC information, defect and breakdown rates, schedule compliance, plan activities, etc.) is used as feedback for problem solving and decision making.	0.759
	PM4	Our organisation uses statistical techniques (e.g. SPC) to control and improve the processes.	0.735
	IA4	Our organisation's quality data are timely.	0.706
	IA3	Our organisation's quality data and productivity information are available to employees and managers.	0.683
	IA1	Our organisation collects and analyses data and organizational performance to determine and develop improvement.	0.679
Top Management Leadership	L2	Our top management/managers actively promote and implement a culture of change, improvement, learning and innovation towards excellence.	0.769
	L5	Our top management encourage long-term strategic thinking and supports long-term quality improvement process.	0.767
	L1	Our department heads take responsibility for quality performance.	0.715
	L4	Our top management promote unity of purpose, share similar beliefs and generate consensus on future direction of our organisation.	0.682
	L3	Our top management actively communicate a commitment on quality and continuous improvement to our staff.	0.667
Human Resource Management	HRM4	Our organisation has a comprehensive performance appraisal system.	0.852
	HRM5	Our organisation has effective two-way communication links with our staff and manager.	0.742
Customer Focus	CF1	Our organisation uses the requirements of customers in designing new products and services.	0.851
	CF2	Our organisation is actively and regularly seeking customer inputs to determine their requirement.	0.737

Different from TQM, there are theoretical grounds that financial performance and non-financial performance are correlated and might be grouped as a dependent construct. A principle component analysis (PCA) was conducted on the 14 items relating to financial performance and non-financial performance of total performance with oblique (direct oblimin) approach is justified. The factor analysis results on corporate performance was illustrated in Table 3. The Kaiser-Meyer-Olkin (KMO) value was 0.91 and the Bartlett's test of sphericity value achieved statistical significance. The presence of two factors with eigenvalues exceeding 1 in this table explained 66% of variance in total performance.



**Table-3.** Factor Analysis Results on Corporate Performance

Factor/ Variable	Item No.	Questionnaire Items	Factor Loading
Non-financial Performance	NFP8	Achievement on performance target	0.858
	NFP9	Overall business performance and practice	0.853
	NFP7	Competitive profile/position development	0.843
	NFP6	Overall respond to competition	0.836
	NFP4	Individual/staff's satisfactory level	0.753
	NFP5	Customer satisfaction index	0.743
	NFP2	Future outlook	0.734
	NFP1	Industry leadership	0.659
	NFP3	Success rate in new product and/or service launched	0.653
Financial Performance	FP5	After-tax return on sales	0.901
	FP2	Profit growth	0.894
	FP4	After-tax return on assets	0.889
	FP3	Revenue growth	0.866
	FP1	Sales growth	0.788

### 4.3. Multiple Regression Analysis Results

Prior to regression analysis, assumptions of multiple regression and more specifically normality, linearity, multivariate outliers, homoscedasticity, and multicollinearity were tested and examined to ensure the results obtained are truly represented the sample the best (Hair *et al.*, 2010). Based on the results, these assumptions are not violated, meaning that the result from the regression analysis is accepted.

The hypothesis tested was to determine the impact of TQM on corporate performance. Table 4 exhibits the result of multiple regression to understand the relative impact of TQM on corporate performance.

**Table-4.** Multiple Regression Analysis of TQM to Corporate Performance

Independent Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	-0.015	0.381		-0.039	0.969
Top Management Leadership	0.238	0.090	0.236	2.641	0.009
Human Resource Management	0.170	0.089	0.147	1.918	0.057
Customer Focus	0.018	0.085	0.016	0.208	0.836
Strategic Management	0.422	0.110	0.357	3.827	0.000
Process and Information Management	0.081	0.086	0.082	0.945	0.347

R = 0.680, R<sup>2</sup> = 0.462; F = 21.329, Sig. = 0.000

The F-value is 21.329 with a significance level of less than 0.001 means that combination of these variables as a whole is significant. Based on the *p*-value, both top management leadership and strategic management contribute significantly positively to the prediction of corporate performance, but, the rest independent variables make positively but weak contribution to that effort. With the R<sup>2</sup> value of 0.462, 46.2 percent of the changes in corporate performance can be explained by the changes in TQM practices.

## 5. Discussion and Conclusion

The result of this study indicates that TQM has a positive impact on corporate performance of Malaysian public listed companies. This finding corroborates with the findings of previous studies (Brah *et al.*, 2002; Escrig-Tena, 2004; Kumar *et al.*, 2009; Powell, 1995; Terziovski and Samson, 1999). Which indicates that TQM practices have impact on corporate performance. Specifically, TQM and its core components include top management leadership and strategic planning were significantly and positively affect corporate performance, both financial and non-financial performance. All practices and implementation should start with top management leadership and commitment. Top management is responsible for establishing and developing policies and procedures for the TQM implementation and they are absolutely vital for the success of any TQM practices. This finding is in line with the finding of the study of Terziovski and Samson (1999). who revealed that top management are absolutely essential in setting strategic directions and building a leadership system that would facilitate organisational performance and learning as well as individual development. They responsible for quality and inspiring employees to provide a total, willing, and voluntary commitment to achieve organisational goals (Goetsch and Davis, 2010; Tarí *et al.*, 2007). Interestingly, this study indicates that strategic planning turns out as the most important component of TQM on corporate performance. Strategic planning involves the activities of allocating the resources of the company aligned to its goal and helps the management to focus on a few key elements in the planning and coordinate efforts across the company to improve performances. Providing product and service excellence have been emphasised and treated as the strategic cornerstone by Malaysian public listed companies where the priority is to meet requirements and enhance the satisfaction of customers. This finding supports Oakland (2003) who proposed that strategic planning is a basic requirement for effective quality management. It is a process whereby an organization defines and develops

the vision and mission of the organization as a guide to achieve its broad objectives (Goetsch and Davis, 2010; Oakland, 2003; Terziovski and Samson, 1999).

It is worth noting that human resource management, customer focus, and process and information management were not strongly and positively affect corporate performance in the regression. It is important to note that from these results, although not all of the TQM practices contribute equally to the achievement of significant performance, these three practices should not be ignored from the focus of improvement. One plausible reason for this is this study was cross-sectional and descriptive of a given sample at a given point in time, performance dimensions describing the benefits derived by human resource management, customer focus, and process and information management might need more time and years of experience on TQM journey in order to become apparent (Psomas and Jaca, 2016; Terziovski and Samson, 1999).

This study provides the theoretical implications for knowledge enhancement in both IC and quality management domain. Many previous TQM studies within Malaysia focused on industry-specific studies such as TQM in the electric and electronic (Abdullah *et al.*, 2008; Abdullah and Tarí, 2017), automotive (Zakuan *et al.*, 2009), manufacturing (Lau and Idris, 2001), small- and medium-sized manufacturing (Long *et al.*, 2015), which are more concerned with producing tangible products. This study extends research in the area of quality management for Malaysian public listed companies in various industries, including hotel, finance, trading and service, technology, consumer products, industrial products, construction, plantation and properties industries. The results of this study have contributed greatly to understanding the relationship between TQM practices and corporate performance for the Malaysian public listed companies. Irrespective of the industrial sector and product or service portfolio, companies are able to effectively implement TQM and achieve superior corporate performance in the modern era.

Unexpectedly, strategic planning came out to have the highest influence on corporate performance among the components of TQM. Strategic planning and top management leadership are the main components that formulate the TQM model and the means by which corporate performance benefits are derived. Therefore, the Malaysian public listed companies need to focus these two TQM factors the most in order to maximise its corporate performance outcomes from TQM practice. A managerial insight which can be deduced from this study is that a public listed company is recommended to concentrate mostly on strategic planning and top management leadership in order to enhance the corporate performance, both financial and non-financial performance. This does not mean that other three factors, human resource management, customer focus, and process and information management, should be omitted but rather to note that that efforts in improved strategic planning and top management leadership are more likely to be fruitful than efforts in improving these factors.

The present study is subjected to some limitations. This study is a cross-sectional study, the causal relationship such as effect of IC management and TQM implementation on corporate performance in Malaysian public listed companies on a before or after event were not identified. Therefore, a longitudinal research design is needed to establish causal relationships. Additionally, the respondents of the interviews in this study were limited to human resource managers of Malaysian public listed companies. Views from quality managers in these companies are not available. This was because some of these companies do not have dedicated quality department or manager designated for the implementation of TQM. The future study is suggested to involve managers from different functions such as quality managers, chief executive officers, marketing managers to explore more insightful views of TQM practices.

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