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The link between competitive priorities and competitive advantage

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Abstract

Purpose- To explore and predict the relationship between the competitive priorities and competitive advantage in the Jordanian Industrial Sector.

Design/methodology/approach- A cross-sectional survey employing a questionnaire method of data collection was adopted. An entire population, which consisted of 88 Jordanian Manufacturing Companies classified in Amman Stock Exchange Market, was targeted by this study.

Findings- The results of data analysis suggested there is a significant relationship between the competitive priorities and competitive advantage.

Research limitations/implications- The research has not taken into consideration the effect of the moderating and intervening variables (*such as company size, business unit, organisational structure, industry type, etc.*) on the relationships relationship between the competitive priorities and competitive advantage in the Jordanian Industrial Sector.

Practical implications- research suggests that linking the competitive priorities to competitive advantage is the master key for a firm to survive in a turbulent environment. Therefore, operations strategy, and marketing strategy should place an emphasis on the competitive priorities such as quality, cost, flexibility, and delivery to achieve, develop, and maintain the competitive advantage.

Originality/value- This paper offers assistance to managers in linking the competitive priorities to competitive advantage when planning the different functional strategies including manufacturing, operations, marketing, and financial.

Keywords- competitive priorities; competitive advantage, quality, flexibility.

Paper type- Research paper

1. Introduction

As organizations are forced to respond effectively and efficiently to changing business environment, then the big challenge that may face them is gaining and developing the competitive advantage. Competitive advantage is the extent to which an organization is able to create a defensible position over its competitors (Tracey et al., 1999). In the same vein, Ma (1999, p. 259) defines the competitive advantage as the asymmetry or differential in any firm attribute or factor that allows one firm to better serve the customers than others and hence create better customer value and achieve superior performance. The empirical research comprises capabilities that allow an organization to shape its competitive advantage and differentiate itself from its competitors (Li et al., 2006). Harrison and Hoek (2002, p. 15) point out that competitive advantage is achieved by the competitiveness of the supply chain, which

means “meeting end customer demand through supplying what is needed in the form it is needed, when it is needed, at a competitive cost”.

2. The need for study

Competitive advantage is still a controversial concept as it is discussed in the literature using different variables, measures, and scales. However, this variation comes from different perspectives of what creates the competitive advantage and its components. In addition, researchers have had different ideas as to what competences are required for creating the competitive advantage. In this context, Conner (2003) addresses the central question: who decides if a company is competitive? He lists a number of answers to this question. For example, governments might define a company as competitive if it conforms to criteria contained within competition or anti-trust law. Managers might define competitiveness in terms of market share and growth. Shareholders may judge competitiveness in terms of profit and growth. Stakeholders may have views of competitiveness based on other values such as care of the environment, social contribution, enlightened employment policies and so on. It is clear that the definition will vary with differing points of view and with nature of the viewer’s interest in the performance of a business (Conner, 2003, p. 196).

In the same vein, Ma (2004, p. 908), states that “ *in the strategy literature, there exists a rich body of knowledge on the nature and causes of competitive advantage ranging from the industry positioning approach, the commitment explanation, to the resource based view and the dynamic capability approach*”.

However, the competitive advantage concept needs to be tested empirically to determine the competitive priorities that create a firm’s competitiveness, as it was

noted that little empirical work is done to address the competitive advantage, in this context, Kathria (2000), states that “*there are little empirically derived taxonomies that characterise manufactures by manufacturing tasks or competitive priorities, such as quality, delivery, flexibility, or cost*”.

Considering the above argument, it could be concluded that there is a need for conducting empirical studies to address and analyse the functions and processes that create the competitive advantage of a firm.

3. Background and previous literature review

3.1 Competitive advantage

Creating a competitive advantage requires determining the factors that put a firm in a better position in comparison to what competitors do have in the marketplace. Thus, creating a competitive advantage is equivalent to determining the sources of innovation. Wheelright (1984) identified four strategic capabilities and consider as competitive priorities. These capabilities include: low cost, quality, quick delivery, and flexibility. The complete advantage is gained according to Passemard and Kleiner (2000) by five source of innovation include: the new technologies; the modification of the demand or a new demand; the occurrence of a new segment; the changes in the costs or the availability of means of production; and the changes in the regulation. In the same vein, Helms (1996) considers that quality and productivity as strategic weapons for achieving competitive advantage. He argues that organisations must be aware of what increases quality or supports production as strategic weapons, otherwise, they lose their market share. In a recent work, Cardy and Selvarajan (2006) consider the competencies as the key to competitive advantage. These competencies are defined according to Hitt et al. (2005) as a combination of resources and capabilities. From a strategic perspective, competencies can be functions, processes,

and routines in an organisation (Cardy and Selvarajan, 2006). Because competency is a controversial concept since it is identified using different perspectives and to give a better understanding for the term competency it must be noted that:

- The concept of competency is central to the domains of both strategy and HRM (Cardy and Selvarajan, 2006).
- Competencies are classified into two categories, the first category is the personal competencies such as knowledge, skills, abilities, experience and personality, and the second category is the corporate competencies which belong to the organization and are embedded processes and structures that tend to reside within the organisation (Turner and Crawford, 1994).;
- Top management needs to have specific competencies includes leadership skills, general management skills, interpersonal skills, communication skills, creativity, and personality traits such as dependability and adaptability (Thornton and Byham, 1982).

In the empirical work conducted by Molina et al. (2004), the authors have used the following variables to determine firms' level of competitiveness:

1. Market share.
2. Profits.
3. Returns.
4. Technological provision.
5. Financial management.
6. Quality of products-services.
7. After sales services.
8. Managers' educational background.
9. Customer loyalty.

10. Supplier loyalty.
11. Location of establishment.
12. Employees' commitment and loyalty.
13. Employees' professional know-how.
14. Firm's reputation.

Molina et al. (2004), have also reviewed the literature on firm's competitiveness and concluded that the competitive advantage is addressed in the literature using different approaches include:

- Resource-based theory emphasises the critical importance of internal resources for sustainable competitive advantage.
- There is a positive relationship between intangible resources (i.e. Research and Development, software capitalisation, advertising expense, and brands) and the competitive advantage.
- Managers play a significant role in achieving the competitive advantage and they are able to understand and describe the economic performance potential of a firm's endowments.
- Managers' perception is a crucial factor towards implementing strategies leading to business success in the long term

According to Eisenhardt and Martin (2000), the resource-based view (RBV) is recently extended to dynamic markets as the RBV has not adequately explained how and why certain firms have competitive advantage in situations of rapid and unpredictable change. This notion is consistent with the argument presented by

Teece et al. (1997) in which they agree that the dynamic capabilities become the source of sustained competitive advantage.

3.2 Competitive priorities

The literature on operations strategy and manufacturing strategy has extensively focused on the competitive priorities that act as strategic capabilities which can help organizations create, develop, and main the competitive advantage. Competitive priorities are defined as “the dimensions that a firm’s production system must possess to support the demands of the markets that the firm wishes to compete in (Krajewski and Ritzman, 1993, p. 47). In the work presented by Phusavat and Kanchana (2007), they identify six criteria to act as competitive priorities include: quality, cost, delivery, flexibility, customer focus, and know-how. They defined these criteria as follows:

- 1) Quality: there are many common aspects representing the term quality such as low-defect rate, product performance, reliability, certification, and environmental concern.
- (2) Cost: the term cost focuses on the ability to effectively manage production cost, including its related aspects such as overhead and inventory, and value-added.
- (3) Delivery. Delivery is considered as a time-based issue. Delivery addresses how quickly a product or a service is delivered to customer. It also incorporates the point of view on the time-to-market for a new product.
- (4) Flexibility. The term flexibility represents the ability to deploy and/or re-deploy resources in response to changes in contractual agreements that are primarily initiated by customers. Several features are included in this term such as adjustment on design/planning, volume changes, and product variety.

(5) Customer-focus. Customer-focus concentrates on how to fulfill customers' needs. It includes after-sale services, product customization, product support, customer information, and dependable promise.

(6) Know-how. The term know-how deals with the trends of decreasing products' life-cycles. Therefore, the issues on knowledge management, creativity, and skill development are included.

It seems that there is a general agreement among authors and researchers (i.e. Wheelright, 1984; Boyer and Lewis, 2002;) that the competitive priorities comprise the following major priorities: flexibility, cost, quality, and dependability. These priorities are discussed below:

3.2.1 Flexibility

It seems that there is a general agreement among authors (i.e. Mandelbaum, 1978; Upton, 1994; that flexibility is viewed as a competitive priority that is required for coping with uncertainty. An early work on flexibility is presented by Mandelbaum (1978) who defines flexibility as the ability to respond effectively to changing circumstances. Mandelbaum's work is extended and supported by many authors and researchers (i.e Zelenovich, 1982; Nakane and Hall, 1991; Upton, 1994, etc.). Similar definitions of flexibility are adapted and adopted in the literatures. In this context, Nakane and Hall (1991) define flexibility as a quick response to change production volume, change product mix, customisation of product (i.e. provide each customer what they want), introduce new products, and adopt new technology. Upton (1994) support mandelbaum's definition in which he defined flexibility as the ability to change or react with little penalty in time, effort, cost, or performance. Linking Upton's definition to Mandelbaum's definition it could be concluded that the both definitions have focused on coping with changes efficiently and effectively in which

they focused on coping with uncertainty with a lower rate of cost. In other words efficiency and effectiveness are the basic criteria for measuring performance where the goals should be met at lower rate of cost and higher utilization of resources. In the same vein, Mandelbaum's (1978) definition of flexibility is analyzed by Corrêa (1992), in which the definition consists of three main elements. *The first* element is "ability..." which gives flexibility the character of a potential. *The second* element is "...to respond..." Response generally means reaction or adaptation to changes. Finally, *the third* element of is "...effectively..." which suggests a link between the concept of flexibility and the concept of the overall performance of the system.

However, flexibility is a multidimensional concept (Sethi and Sethi, 1990). Therefore, it was classified in the literature using different dimensions. Corrêa (1992) suggests that the different kinds of flexibility would be appropriate to deal with different conditions or types of change". An early classification of flexibility was suggested by Mandelbaum (1978) who classifies it into two forms. *The first* is action flexibility (the capacity for taking new action to meet new circumstances). *The second* is state flexibility (the capacity to continue functioning effectively despite changes in the environment). Buzacott (1982), in his taxonomy identifies two classes of flexibility

- *Job flexibility* is the ability of the system to cope with changes in jobs to be processed by the system.
- *Machine flexibility* is the ability of the system to cope with changes and disturbances at the machine and work stations.

A proposed classification of flexibility is presented by Narian et al. (2000) who classify flexibility into three categories:

1. *Necessary flexibility* (machine flexibility, product flexibility, labour flexibility, materials handling flexibility, routing flexibility, volume flexibility).

2. *Sufficient flexibility* (process flexibility, operation flexibility, programme flexibility, material flexibility).
3. *Competitive flexibility* (production flexibility, expansion flexibility, market flexibility).

However, different types of flexibility are defined and addressed in the literature such as:

- Product flexibility: The ability to add or substitute easily new parts (Sethi and Sethi, 1990).
- Volume flexibility: The ability of a manufacturing system to vary total production volume economically (Das, 2001).
- Mix flexibility: The ability of the organisation to produce different combinations of products economically and effectively (Zhang et al., 2002).
- Machine flexibility: The ability of different types of operations that the machine can perform without requiring a prohibitive effort in switching from one operation to another (Sethi and Sethi, 1990, Das, 1996, Gupta and Somers, 1996).
- Labour flexibility: The ability of the workforce to perform a broad range of manufacturing tasks economically and effectively (Zhang et al., 2002).
- Market flexibility: The ability to adapt to a changing market environment easily (Das, 2001).
- Process flexibility: The ability of a manufacturing system to process a given set of components with different processes, operation sequence and materials (Chen et al., 1992).
- New product flexibility: The ability of a manufacturing system to introduce and manufacture new parts and products (Das, 2001).

- Expansion flexibility: The ability to increase capacity and capability easily when needed (Sethi and Sethi, 1990).

3.2.2 Quality

Quality is a competitive weapon in the marketplace. Quality engenders competitive advantage by providing products that meet or exceed customer needs and expectations (Lee and Zhou, 2008). Quality is defined using different perspectives as it is still a subjective goal that has indefinable characteristics (Kazan et al., 2006). An early definition for quality is presented by Juran (1974) who defines quality as “*fitness for use*”. Juran’s definition employs the customer’s perspective in defining quality. It is the customer who decides what goods or services that best satisfy the customers’ needs. A similar definition is presented by Reeves and Bednar (1994) in which they define quality as excellence, value, conformance to specifications, and meeting or exceeding customers’ expectation). The term “fitness for use” presented by Juran (1974) is included in the quality definition presented by Reeves and Bednar (1994). Therefore, it could be concluded that the customer perspective is the master key that should be included in any term assigned for defining quality. Garvin (1987) argues that quality is a multidimensional construct. He links the term quality to eight dimensions include: performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality. These dimensions originally match with the customer perspective. More definitions of quality are presented in Table 1

Table 1: definitions of quality

Author(s)	Definition(s) of quality
Juran (1974)	Fitness for use
Crosby (1996)	Conformance to specifications
Feigenbaum (1991)	“The total composite product and service characteristics of marketing, engineering manufacture, and maintenance through which the product and services in use will meet the expectations of the customers
Ishikawa (1989)	To practice quality control is to develop, design, produce and service a quality product which is most economical, most useful, and always satisfactory to the customer
Deming (1986)	Quality should be aimed at the needs of the consumer, present and future”.
Garvin (1987)	There are eight dimensions of quality as defined from the customer’s view point namely, performance, features, reliability, conformance, durability, serviceability, aesthetics, and perceived quality
Bregman and Klesfsjo (1994)	Quality is the ability to satisfy the needs and expectations of the customers.
Oakland (2003)	Quality is “meeting the customer requirements.

Considering the above argument it could be concluded that quality is clearly viewed as a main source of competitive advantage through meeting the customer requirements. Moreover, scholars have linked quality to competitive strategy. In this context, Prajogo (2007) considers quality as a strategic performance as a reflection of a competitive strategy of the firms. He supports the notion that quality has gone through an evolution process, from an operational level to a strategic level. Thus, quality should be adopted as a strategic goal in organizations.

Porter (1980) argues that organizations compete on quality can adopt differentiation strategy and position their products based on several attributes leading to a premium price. Therefore, quality helps organizations enhance their competitiveness and leads to customer loyalty through meeting customer’s expectations. This conclusion leads organization to view quality as a very competitive weapon that should be adopted as a competitive strategy playing a major role in creating, sustaining, and maintaining the competitive advantage of a given firm.

3.2.3 Cost

Porter (1980) argues that competitive advantage can be achieved by adopting one or more of the following generic competitive strategies:

1. Cost leadership strategy: the features of this strategy are: low cost relative to competitors, related and standardised products, economies of scales, internally focused, structured organisation and responsibilities, with intense supervision of labour. Porter suggests that an overall cost leadership strategy requires intense supervision of labour, tight cost control, frequent and detailed control reports and structured organisation and responsibility.
2. Differentiation strategy: this strategy is described in terms of product uniqueness, emphasis on marketing and research, flexible structure.
3. Focus strategy: this strategy implies the focus on a narrow strategic target (buyer group, product line or geographic market) through differentiation, low cost or both.

Hill (1994) indicates that low cost manufacturing is the priority when profit margins are low. The logic behind linking cost leadership strategy to competitive advantage is the fact that competitive advantage can be divided into two basic types: lower cost than rivals, or the ability to differentiate and command a premium price that exceeds the extra cost of doing so. (Porter, 1991).

Delivery

Delivery is a competitive priority where the customers are interested in satisfying their needs and wants in the right quantity at the right time. In this context, Kumar and Kumar, 2004, p. 310) state that" *Delivery of the required function means ensuring that the right product (meeting the requirements of quality, reliability and maintainability) is delivered in the right quantity, at the right time, in the right place,*

from the right source (a vendor who is reliable and will meet commitments in a timely fashion), with the right service (both before and after sale), and, finally, at the right price. In the same vein, Li (2002) referring to Krajewski and Ritzman (1996) argue that delivery capability is a time issue where it reflects the following concepts:

1. The number of aspects of an organization's operations.
2. How quickly a product or service is delivered to a customer.
3. How reliably the products or services are developed and brought to the market.
4. The rate at which improvements in products and process are made.

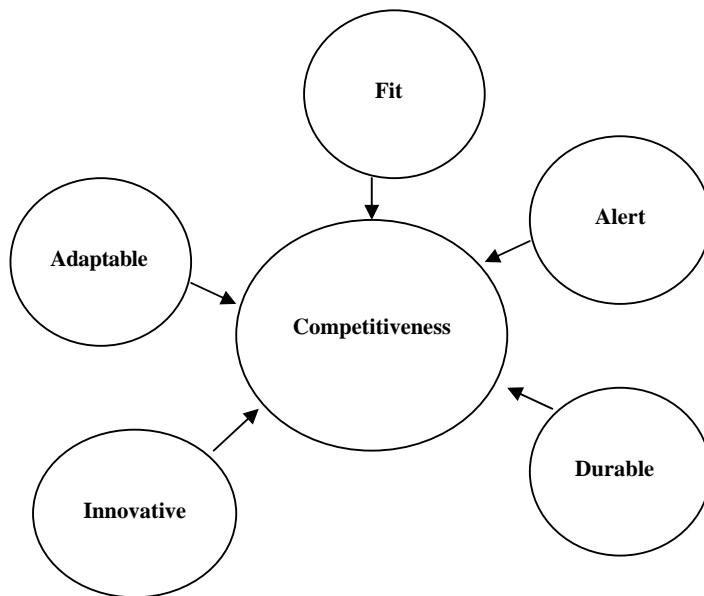
4. Review of selected studies related to competitive advantage

The researcher has reviewed selected studies conducted on competitive advantage as an attempt to determine how it is understood and to explore its components considering the quantitative indicators of competitiveness such as: market share, profits, returns, etc. and the qualitative factors such as: customer royalty, firm's reputation, and employees' loyalty.

4.1 Conner (2003)

Conner (2003) proposed a model identifying the properties of a competitive firm. He argues that these properties will improve the firm's chance for achieving competitiveness. The model is depicted in **Figure 1**.

Figure 1: Properties of competitive advantage. Source: Conner, 2003, p. 200.



The proposed model by Conner (2003) suggests that a competitive advantage of a firm is achieved by the key dimensions or properties of the firm's conditions. These properties are described as follows:

- Fit means that the organization has appropriate resources and functioning autonomic systems. This dimension emphasises the role of appropriate resources (i.e. business assets) in maintaining or winning additional business in the served markets of the organization.
- Alert means that the organization has intelligence and learning capacity. This dimension measures the ability of a firm to turn into change signals in the external and internal environments.
- Durability dimension may be thought of as a measure of corporate stamina. It is measured in terms of resource renewal and purpose.
- Innovation is concerned with human capital and imagination in the organization to gain an edge over other firms in industry where the innovation should be placed.

- Adaptability dimension depends upon information processing and mutability, as information is a pre-request for response to change, particularly, when dealing with uncertain business environment.

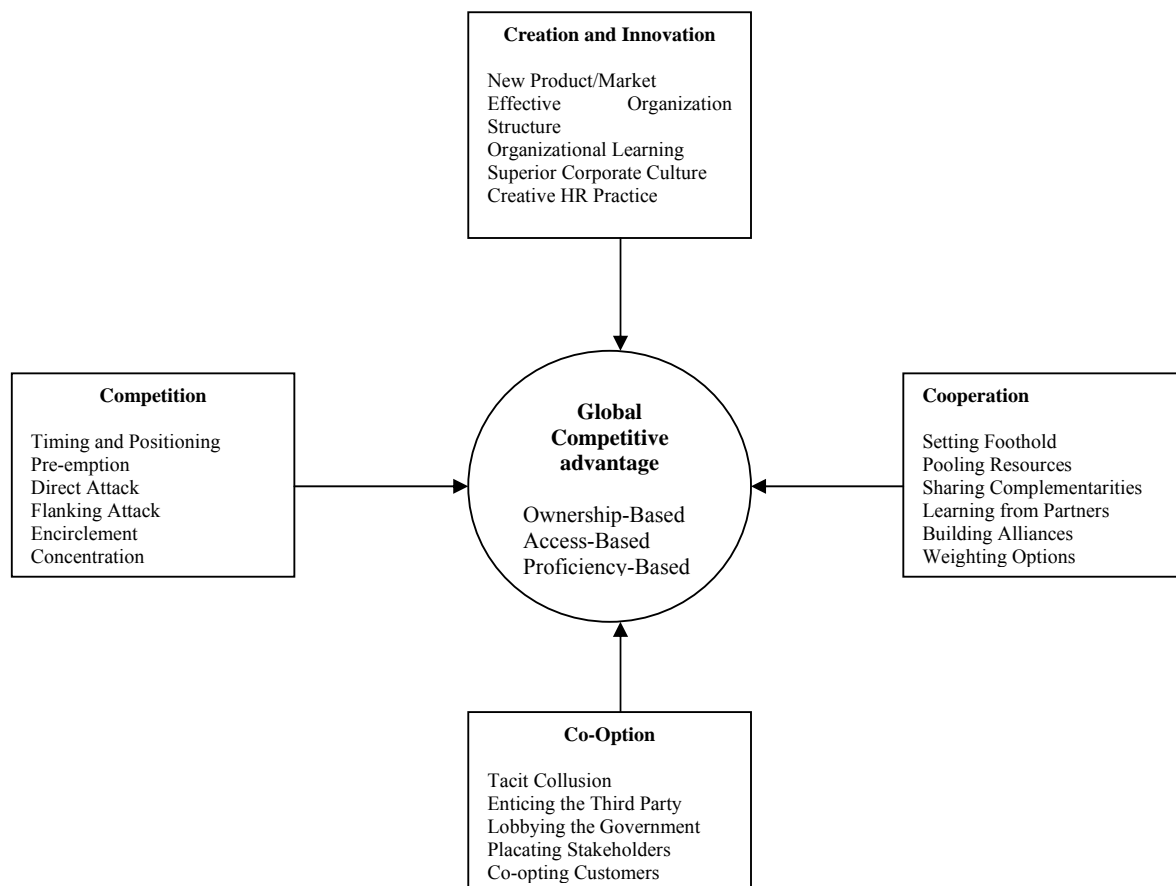
4.2 Kim and Oh (2004)

In the study prepared by Kim and Oh (2004), the focus of the study was to help hotel managers understand how their firm can achieve a competitive advantage over their competitors. They have developed an integrated approach comprising three conceptual frameworks: Porter's five –forces approach (BFA), the resources-based approach (RBA), and the relational approach (RA). They shed light on the similarities and differences of the three approaches. According to Porter's five –forces approach, the sources of competitive advantage are associated with five industry forces. These are (threats of new market entries; threat of substitute products or services; bargaining power of buyers; bargaining power of suppliers; and competitive intensity among industry incumbents. In contrast with the PFA, Kim and Oh (2004), referring to Barney (1991) point out that the competitive advantage according to the resource-based approach (RBA) stem from internally-developed resources with characteristics of value, rareness, inimitability, and non-substitutability because resources with such characteristics can be neither commonly traded nor easily acquired by their competitors. According to the RA, a main source of competitive advantage is built on value-creating resources that are critical inputs into the production and distribution of its products and services (Barney, 1991). Their integrated approach placed the RA in a central position because building cooperative relationships with customers and suppliers is the most critical theme in achieving competitive advantage.

4.3 Ma (2004)

Based on an extensive review of literature in both international management and strategy, Ma (2004) has developed a framework to identify the determinants of competitive advantage. The framework consists of four major groups of determinants of competitive advantage denoted as 4Cs: creation and innovation, competition, cooperation, and co-option. The author argues that the rationale for the 4Cs treatment is the fact that various forces and factors- environmental, organizational, or personal, could potentially determine the competitive advantages of a business firm. The study shows that these forces and factors could be serendipitous, arising and disappearing without the conscious control of the firm, e.g. luck; or deliberate, subject to purposeful strategic manoeuvres in competition, cooperation, or creative and innovative managerial actions in managing a firm's organizational structure, process, culture, technology and people. The study framework is depicted in **Figure 2**

Figure 2: Global competitive advantage: A 4Cs framework, Source: Ma (2004, p. 909)

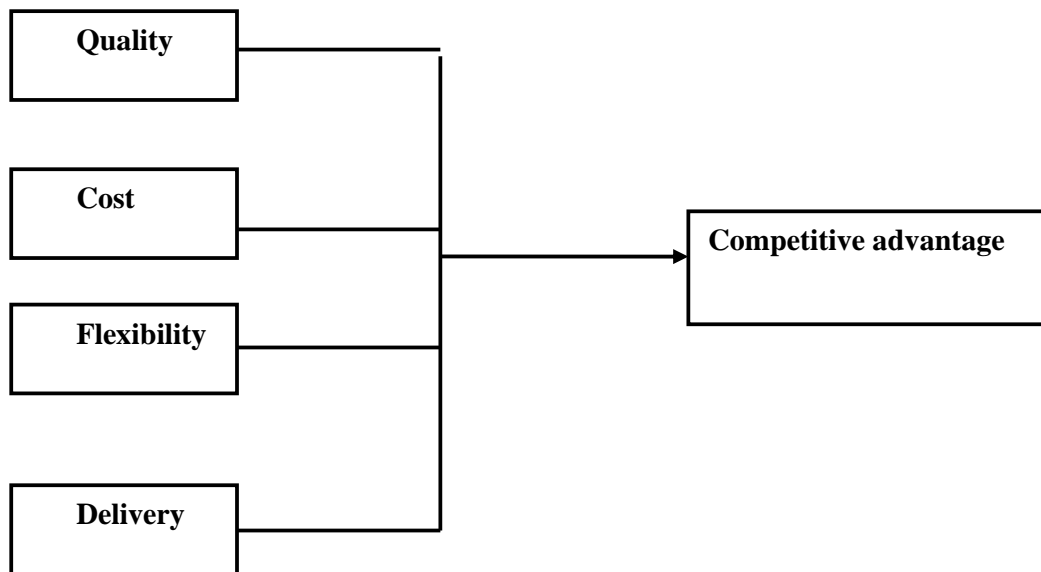


5. Research model

Considering the argument presented in sections 3 and 4, the research model is depicted in Figure 3 to meet the research objective presented in section: 5.2 , the model suggests that competitive advantage of a firm is generated by the competitive priorities including quality, cost, flexibility, and delivery. However, it has been argued that there is a link between quality each of the two competitive strategies: cost leadership and differentiation (Prajo, 2007). In his empirical work on the relationship between competitive strategies and product quality Prajo (2007) referring to Porter (1980) points out:

- To compete on cost leadership strategy, firms will put considerable effort in controlling and production cost, increasing their capacity utilization, controlling materials supply or product distribution, and minimizing other costs, including R & D and advertising.
- To compete on differentiation strategy, firms need to offer unique products which are characterized by valuable features, such as quality, innovation, the delivery system, and a broad range of other factors.
- There is a link between quality and competitive strategy since quality is categorized as a primary basis for differentiation strategy as firms adopting this strategy will uniquely position their products based on several attributes leading to a premium price.

Figure 3: The research Model



5. Methodology

5.1 Problem Statement

This research is concerned with answering the following questions:

1. To what extent do competitive priorities affect the competitive advantage of a firm?
2. What factors that contribute to creation of the competitive advantage of a firm?

5.2 Research objectives

The aims of this research proposal can be summarised as follows:

1. Predicting the relationships between competitive priorities and competitive advantage in the Jordanian Manufacturing companies.
2. Clarifying the concept of competitive advantage considering different perspectives and approaches related to competitive advantage term.

6. Methodology

Data collection methods and measurement of the research constructs

A positivistic methodology is adopted, because of the need for quantitative data to satisfy the objectives of the research and the need for a large sample to carry out the data analysis. In addition, there is a need to examine the anticipated relationships included in the research model depicted in Figure 1.

Data collection consisted of a questionnaire designed to test the model and a delivery and collection questionnaire method was used in distributing and collecting the questionnaires to ensure a high response rate and to take the advantages of personal contact since this method enhances respondent participation. However, to ensure that the criteria of questionnaire construction and pre-testing were met, time and effort was devoted towards design, layout, and wording of the questionnaire used in this research. As a result, the survey instrument was pre-tested with executives and academic experts who were asked to review the questionnaire for readability, ambiguity, completeness, and to evaluate whether individuals items appeared to be appropriate measures of their respective constructs. (Dillman, 1978). This process has led to several minor changes, which were made prior to generating the final version of questionnaire. The questionnaire format was highly structured where all of its questions were fixed-response alternative questions that required the respondents to select from responses which are located by using five point Likert scales. The questionnaire is presented in Appendix A.

All of the measurement scales used in this research were based on existing research. Assuring the validity and reliability measures requires supported literature to validate the measurement scales used for operationalising the research constructs.

The competitive advantage construct was measured using the measurement scales and indexes included in the previous work of Molina et al. (2004), who indicates that the authors have used the following variables to determine firms' level of competitiveness:

1. Market share.
2. Profits.
3. Returns.
4. Technological provision.
5. Financial management.
6. Quality of products-services.
7. After sales services.
8. Managers' educational background.
9. Customer loyalty.
10. Supplier loyalty.
11. Location of establishment.
12. Employees' commitment and loyalty.
13. Employees' professional know-how.
14. Firm's reputation

Competitive priorities were operationalised using the measurement scales which adapted from the previous work as seen in Table 2

Table 2: Supported literature for measurement scales

Construct	Supported literature for measurement scales
Quality	Burgess et al, (1998), Oakland (2003), Parajogo (2007)
Cost	Lee and Zhou (2000), Kazan, et al. (2006)
Delivery	Burgess et al, (1998), Kazan, et al. (2006)
Flexibility	Sethi and Sethi (1990), Zhang and Sharifi (2000), Zhang et al. (2002)

The data of interest in this study are responses from executives with titles of Director, Vice-President, Operations or Production Manager, and Marketing Manager. Jordanian manufacturing companies that are classified as public shareholding companies at Amman Stock Exchange Market were chosen as the targeted population for this research because the industrial sector is more relevant and clearly reflects the constructs of this research since its variables are related to manufacturing rather than services. The entire population, which consisted of 88 industrial companies that are classified at Amman Stock Exchange Market as industrial shareholding companies according to its report for the year 2006 was targeted as the sample. The decision was made to adopt the individual distribution to administer the questionnaire. The questionnaire was accompanied by a covering letter explaining the research objectives. The participants were asked to complete the questionnaires, which were picked up later. The main reason for choosing the entire population is to ensure that the sample is representative and not biased.

The main survey consisted of 400 questionnaires. Each manufacturing company was delivered four to five questionnaires to be given for its Director, Vice-President, Operations or Production Manager, Finance Manager and Marketing Manager. The respondents were comprised of 334 questionnaires, of which 226 completed questionnaires. Out of them 12 questionnaires were unusable. The completed questionnaires were collected from executive with title of Director (n =53), Vice-President (n = 52, Operations or Production Manager (n = 59), and Marketing Manager (n = 62). These usable responses represented a response rate of 45%. The responding firms cover a wide range of manufacturing activities including electronics, engineering products, electric, chemical and pharmaceutical.

7. Data Analysis and Discussion

A reliability test was carried out using Cronbach's alpha, which measures the internal consistency of a construct. The recommended minimum acceptable limit of reliability "alpha" for this measure is 0.60 (Hair et al., 2003). The results can be seen in Table 3 α – values constructs. The table shows that all the constructs have passed the reliability test where all α – values have exceeded the recommended minimum value of Cronbach's alpha.

Table 3: Values of Cronbach's alpha of the research constructs

Construct	α- Value
Competitive advantage	.8214
Quality	.7168
Cost	.8990
Delivery	.9226
Flexibility	.8339

Frequency and descriptive statistics were used to determine the relative importance for each of the competitive priorities in achieving competitive advantage. The results are given in Table 4.

Table 4: Descending means of the competitive priorities

Construct	Mean	Standard deviation
Quality	4.213	.5537
Cost	3.270	.7405
Flexibility	3.127	.5793
Delivery	3.081	.6726

As seen in Table 4, the respondents agreed that their companies utilise different competitive priorities in maintaining the competitive advantage. Quality was ranked with an average of 4.213 as the most important type of competitive priorities in achieving and maintaining the competitive advantage. The next frequent type of competitive priorities was cost, which was ranked in the second class with an average of 3.270. Flexibility and delivery are ranked with an average of 3.127 and 3.081 respectively. It was noted that all the competitive priorities seen in Table 4 have an average of above 3. This result leads us to conclude that all of the competitive

priorities listed above occupy a considerable importance in the manufacturing firms' view in Jordan.

8. Hypothesis Testing and results

The hypotheses of this research are aimed at investigating and examining the relationships between the competitive priorities and competitive advantage. In other words, the hypotheses are aimed at investigating the extent that the construct of competitive advantage is a function for competitive priorities include quality, cost, delivery and flexibility. The hypotheses are consistent with the central objective of the research which is concerned with predicting the relationships between competitive priorities and competitive advantage in the Jordanian Manufacturing companies.

More specifically, the rationale for developing the research hypotheses is the fact that there is a general agreement among authors and researchers (i.e. Wheelright, 1984; Boyer and Lewis, 2002;) that the competitive priorities comprise the following major priorities: flexibility, cost, quality, and dependability where all of them contribute to creation of competitive advantage in consistent with the central objective of the research mentioned above. This argument leads to formulating and testing the following hypotheses:

H1: Quality affects positively the creation of competitive advantage of a firm.

H2: Cost leadership reduction strategy affects positively the creation of competitive advantage of a firm.

H3: Delivery affects positively the creation of competitive advantage of a firm.

H4: Flexibility affects positively the creation of competitive advantage of a firm.

Multiple regression analysis was conducted to test the above hypotheses. Multiple regression identifies how much of the variance in the dependent variable will be explained when a set of variables is able to predict a particular outcome.

Kurtosis¹ and skewness² values were used to examine and check the normality of each variable included in the research. According to Hair et al. (2003, p. 244) when skewness values are larger than +1 or smaller than -1 this indicates a substantially skewed distribution. On the other hand, a curve is too peaked when the kurtosis exceeds +3 and is too flat when it is below -3. Thus, skewness values within the range of -1 to +1 and kurtosis values within the range of -3 to +3 indicate an acceptable range. The values of skewness and kurtosis for each variable are shown in Table 5 where all the research constructs fall within the acceptable range.

Table 5 Skewness and kurtosis for research constructs

Variable	Skewness	Kurtosis
quality	-1.041-	-.477-
Competitive advantage	-.691-	-.275-
cost	-.580-	-.933-
Flexibility	-.962-	.224
Delivery	.244	.932

Hence, a multiple regression analysis is conducted. The results of multiple regression analysis are presented in Tables: 6, 7, And 8. Based on the above hypotheses, four

¹ Kurtosis indicates the extent to which the height of the curve (probability density) differs from that of the normal curve. Positive kurtosis is associated with distributions with long, thin tails, whereas negative kurtosis is associated with shorter, fatter tails relative to the normal curve (West et al., 1995, p. 60). In other words, Kurtosis is a measure of a distribution's peakedness (or flatness). Distributions where responses cluster heavily in the centre are peaked. Distributions with scores more widely distributed and tails further apart are considered flat (Hair et al., 2003, p. 244).

² Skewness is a measure of symmetry of a distribution. A positively skewed distribution has relatively few large values and tails off to the right, and negatively skewed distribution has relatively few small values and tails off to the left. Skewness values falling outside the range of -1 to +1 indicate a substantially skewed distribution. (Hair et al., 1998, p. 38).

independent variables are identified predictor variables: *quality, cost, delivery, and flexibility* and one dependent or outcome variable is considered (*competitive advantage*).

Table 6: Model Summary

Model	R	R Square	Std. Error of the Estimate
1	.880	.775	.4108

Table 7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	128.155	4	32.039	189.873	.000
	Residual	37.291	221	.169		
	Total	165.446	225			

Table 8: The results of multiple regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	-1.858	.265		-7.002	.000
	Flexibility	.841	.069	.568	12.216	.000
	Delivery	.398	.062	.312	6.451	.000
	Quality	.187	.051	.121	3.646	.000
	Cost	.242	.042	.209	5.781	.000

a Dependent Variable: Competitive advantage

Considering the statistic data presented in tables 6, 7, and 8 the decision is made to accept all the hypothesised relationships between competitive priorities and competitive advantage. A summary of the research hypotheses (H1-H4) and their results is given in table 9.

Table 9: Summary of the research hypotheses (H1-H4) and their results

Hypotheses	Description	Beta	t-value	Comment
H1	Quality affects positively the creation of competitive advantage of a firm.	.568	12.216	Accepted
H2	Cost leadership reduction strategy affects positively the creation of competitive advantage of a firm	.312	6.451	Accepted
H3	Delivery affects positively the creation of competitive advantage of a firm.	.121	3.646	Accepted
H4	Flexibility affects positively the creation of competitive advantage of a firm.	.209	5.781	Accepted

With regard to the relationships between the independent and dependent variables, as seen in Table 9, the results emerged from the multiple regression analysis revealed that the coefficient of determination R^2 which predicts the relationship between the independent variables and dependent variable is equal to 0.775. This indication shows that 77.5% of the total variance in the dependent variable (competitive advantage construct) is accounted for by the independent variables (quality, cost, delivery, and flexibility).

As shown in Table 9 the evidence of the multiple regression analysis shows that a positive *significant* relationship is found between each of the following independent variable (quality, cost, delivery, and flexibility) and the dependent variable (competitive advantage). The results of the multiple regression analysis revealed that the calculated t-values ($t=12.216, 6.451, 3.646, 5.781$) of the hypothesised relationship between each of the following variables: quality, cost, delivery, and flexibility and the competitive advantage construct.

The above result are similar to findings emerged from an empirical work conducted by Kazan et al. (2005) in which they found significant relation ships between quality, cost, and flexibility and financial performance. The results are also in consistent with work presented by Phusavat and Kanchana (2007) where the authors conclude that the

quality, customer focus, and delivery criteria are recognised as important priorities to enhance manufacturing firm's competitiveness.

9. Contributions of Research to Knowledge

On the academic level, the study extends empirical research addressing the mutual relationships between competitive priorities and competitive advantage (e.g. Kazan et al. (2005, Cardy and Selvarajan, 2006, Phusavat and Kanchana (2007).

Practically, the findings of this research suggest linking the competitive priorities to competitive advantage is the master key for a firm to survive in a turbulent environment. However, operations strategy, and marketing strategy should place an emphasis on the competitive priorities such as quality, cost, flexibility, and delivery to achieve, develop, and maintain the competitive advantage.

9. Limitations and further directions for future research

This research has several limitations, which should be noted. It is worth mentioning that the research has not taken into consideration the effect of the moderating and intervening variables (*such as company size, business unit, organisational structure, industry type, etc.*) on the relationships between the competitive priorities and the competitive advantage of a firm. In addition, the sample was limited to the Jordanian manufacturing companies classified in Amman Stock Exchange Market as public industrial shareholding companies. Thus, it is not representative of global industry and therefore the findings are not generalisable, as the research excluded the Jordanian manufacturing companies that are not classified in Amman Stock Exchange Market due to absence of a database about them.

Despite the above limitations, this study is the first attempt in Jordan to examine empirically the relations between the competitive priorities and the competitive advantage of a firm. Therefore, the mentioned limitations should be viewed as

opportunities for future research. The study propose conducting more empirical studies about the impact of competitive priorities on the financial and non-financial performance of a firm; the role of the intervening variables (i.e. company size, organizational level, industry type) on the relationship between competitiveness and organizational performance , the role of competitive priorities in planning the different functional strategies including manufacturing, operations, marketing, and financial.

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Appendix A

Questionnaire survey

Dear participant:

I am currently undertaking a research project investigating the link between competitive priorities and competitive advantage. Your response is extremely important to the success of this study. I would like to assure you that your response will be treated as "**Strictly Confidential**". Your response will be used for academic purposes only. Please answer the questionnaire from the perspective of the job title that most clearly defines your job responsibilities (e.g. Director, Vice-President, Operations Manager, Marketing manager, Plant manager, etc). Also, please note that the questions were written to be applicable to many types of manufacturing companies. Please answer all questions. However, if you are unsure about a response, or think it would be misleading, please leave the specific question unanswered.

Thanking you very much for your help and co-operation

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Section A: Competitive priorities

This section is concerned with predicting the relationship between the competitive priorities and the competitive advantage in the manufacturing companies in Jordan. Please mark (x) in the box which best describes your agreement or disagreement on each of the following statements which describes your company's ability to use them as competitive priorities

(1) Strongly disagree	(2) Disagree	(3) Neither agree nor disagree	(4) Agree	(5) Strongly agree
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Statement	(1)	(2)	(3)	(4)	(5)
Quality					
1. Low defect rates					
2. High reliable products					
3. High durable products					
4. High performance products					
5. High focus on conformance to specifications					
6. Effective after-sales service					
7. Meeting the customer requirements					
Cost					
8. Decreasing the machine's set-up time					
9. Decreasing the stock costs					
10. Decreasing the production cost					
11. Decreasing the per product cost					
12. Decreasing the materials cost					
13. Decreasing the labour cost					
14. Applying the economy of scale strategy					
Delivery					
15. Delivering the customers' orders on time					
16. Increasing the reliability of delivery					
17. Increasing the rate of delivery					
18. Shortening the delivery time					
19. Doing fast deliveries					
20. Introducing new products quickly					
Flexibility					
21. Varying total production volume economically					
22. Changing the production volume easily					
23. Producing different product types without major changeover					
24. Producing different combinations of products economically and effectively given certain capacity					
25. The workforce can perform a broad range of manufacturing tasks economically and effectively					

26. Introducing and manufacturing new products quickly in a short time					
27. Maintaining performance standards when producing a wide variety of products					
28. Increasing capacity and capability easily when needed					
29. Operating profitability at different production volumes					
30. Changing the quantities of products quickly					
31. Doing Machine set-up quickly					
32. Facing unpredictable changes in product life cycle imposed by the market and competitors					
33. Building proactive strategies to deal with changes in the market					
34. Reacting quickly to competitor's actions					
35. Detecting the changes in marketplace, customer demands and needs and competitors' activities and position					

Section B: Competitive advantage

This section is concerned with determining the main indicators used for measuring the competitive advantage in the Jordanian manufacturing companies. Please mark (x) in the box which best describes your agreement or disagreement on using each of the following indicators to determine how the competitive advantage is achieved and maintained

(1) Strongly disagree	(2) Disagree	(3) Neither agree nor disagree	(4) Agree	(5) Strongly agree
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Statement	(1)	(2)	(3)	(4)	(5)
Quality					
1. Market share.					
2. Profits.					
3. Returns.					
4. Technological provision.					
5. Financial management.					
6. Quality of products-services.					
7. After sales services.					
8. Customer royalty.					
9. Supplier loyalty.					
10. Location of establishment.					
11. Employees' commitment and loyalty.					
12. Employees' professional know-how.					
13. Firm's reputation					

Section C: Company Profile

- 1. Please specify in what type of business/ industry is your company engaged (e.g., steel manufacturing): -----

- 2. Please specify your job title -----
- 3. Please specify the number of employees in your company-----
- 4. Please specify how many years of working experience do you have in your company? -----

Thanking you very much for your help and co-operation