Revisiting the competitiveness theory in the new global environment: review and analysis of the competitiveness definition

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Abstract:

The purpose of this research is to conceptualise the definition of competitiveness, based on extant theoretical and empirical research, thereby advancing the process of competitiveness theory building. To address the research purpose, the study analysed theoretical backgrounds of competitiveness to develop a comprehensive perspective and definition of the construct. To address the research purpose, in this study: 1) a theory building process (Silver, 1983) was used to analyse existing definitions of the competitiveness construct; 2) theoretical concepts were extracted from the existing competitiveness definitions and theories; 3) based on the analysis, a comprehensive definition of competitiveness was proposed.

Keywords: competitiveness definition | theory building | productivity | knowledge

Article:

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1 Introduction

In the late 1970s, intellectual leaders, including scholars and politicians, began to emphasise the concept of competitiveness in the race to achieve economic growth in the flattening world (Krugman, 1996). However, it was not until the 1990s, when Michael Porter (1990) published his influential book, Competitive Advantage of Nations, that spread the term globally and ubiquitously (Flanagan et al., 2007). Economic unions, international organisations, and research centres – such as the European Union (EU), Organization for Economic Cooperation and Development (OECD), World Economic Forum, and International Institute for Management Development – began publishing competitiveness reports comparing countries’ economic performance, which further increased interest in the competitiveness (Chikán, 2008; Gardiner et al., 2004). As Krugman (1996, p.17) notes, countries had no doubts that to achieve prosperity, "competitiveness is the key; the only question was how to achieve it".

What is competitiveness? In general, it is an ability related to prosperity, or "sustained superior performance" [Powell, (2001), p.876], and has been used as a broader (e.g., national) or narrower (e.g., firm) term, based on the level of interest (Porter, 1990). Even at the same level, definitions of the term vary significantly from one study to another. For example, competitiveness at a national level has been viewed as general as "an ability to create welfare" [Aiginger, (2006), p.162]; as simple as national productivity (Porter, 1990); as sarcastic as "a poetic way of saying productivity" [Krugman, (1996), p.18]; or as specific as "the ability of a country to realize central economic policy goals, especially growth in income and employment without running into balance-of-payments difficulties" [Fagerberg, (1988), p.355]. More recently, World Economic Forum, in an attempt to rank countries using the Global Competitiveness Index, defined competitiveness as a "set of institutions, policies, and factors that determine the level of productivity of a country" (World Economic Forum, 2015).The versatility of the competitiveness term resulted in its ambiguity and, as a result, to date, there is little consensus on what the term actually means and how it can be measured (Aiginger, 1995; Arend, 2003; Krugman, 1994; Powell, 2001; Siggle, 2001). Furthermore, the meaning of the term has not been formally reexamined since it was first introduced 25 years ago by Porter (Ketels, 2006) and the state of competitiveness theory building has not been analysed.

Theory building process involves constructing steps of abstraction from sensations, concepts, constructs to developing theoretical propositions with the goal to achieve a full formalisation of a theory to explain and predict the world around us (Hunt, 2002). According to Silver (1983), theory is a collection of propositions that articulate the relationship of several constructs that are created by concepts. Concept is "the smallest unit of analysis in the thought process" [Silver, (1983), p.5] and is a tool of interpreting the stream of sensations around us. Concepts, which are based on interaction with reality, are merged into "a higher-order unit of thought" [Silver, (1983), p.5] known as construct, which is non-direct to the real world but perceived to exist.

The next level of the theory building process is developing propositions. Propositions are a collection of constructs which are "clearly, logically, and convincingly" related to each other [Silver, (1983), p.6]. Furthermore, each proposition includes fully described interrelations among constructs and "rigorous articulation of the entire syntactic and semantic structure of the theory" [Hunt, (2002), p.197].

Even though the term competitiveness is used frequently to denote current economic performance of various entities as well as national prospects in relationship to the globalised economy (Krugman, 1996), scholars do not agree on which concepts must be included and how to combine them into a comprehensive construct's definition (Aiginger, 1995; Krugman, 1994; Siggle, 2001). This indicates the competitiveness theory building process remains between concept identification and construct building (Silver, 1983). Therefore, identifying and clarifying concepts imperative to define competitiveness is a required first step for understanding theoretical pillars of the competitiveness construct.

The purpose of this study was to revisit the definition of the term by reviewing and analysing its use in extant theoretical and empirical competitiveness research. The objectives were to:

1. determine and analyse concepts utilised in the existing competitiveness definitions and their interrelationships
2. identify and resolve any discrepancies in the existing definitions
3. based on the analysis, propose a comprehensive competitiveness definition.

Developing a theoretically grounded and empirically corroborated definition is a critical step in a theory building process to provide direction for further theoretical developments (Aiginger, 1995; Arend, 2003; Krugman, 1994; Siggle, 2001). This might also allow the development of more efficient and effective policies based on accurate assessment of competitiveness of businesses, industries, and countries. As a result of the analysis of existing competitiveness definitions found in the literature, theoretical concepts were extracted and clarified. Relationships between the concepts were proposed and a comprehensive definition of competitiveness was developed. Based on the proposed definition, implications for policy makers were presented.

2 Method

The process of revisiting the definition of competitiveness draws on the content analysis methods by Elo and Kyngas (2007) and Spiggle (1994). According to Spiggle (1994), scholars can categorise the components of written messages and "break(s) down or divide(s) some complex whole into its constituent parts" (p.492), to identify "patterns in the data" (p.493). Inductive content analysis can identify existing concepts in a text and serve as a guideline to systematically understand relevant literature (Elo and Kyngas 2007).

In this study, Porter's (1990) competitiveness definition was chosen as a guideline for inductive content analysis because it has greatly influenced competitiveness discussions (Ketels, 2006; Stonehouse and Snowdon, 2007). The content analysis of existing competitiveness definitions consisted of the following stages. First, Porter's definition was used to derive concepts of the competitiveness construct. Next, existing definitions of competitiveness were compiled from extant research. These definitions were systematically analysed: individual concepts were extracted and clarified, and interrelationships between these concepts within each definition were examined (Stemler, 2001). Following the inductive process from Elo and Kyngas (2007) and Spiggle (1994), the derived concepts were grouped into higher-order concepts (called factors) to create a focused yet comprehensive categorisation matrix. The systematic process allowed narrowing down several key factors, which should be incorporated into the definition of the competitiveness construct. Next, drawing on competitiveness definitions from extant research and contemporary theoretical developments, each factor in the categorisation matrix was deductively identified and refined (Elo and Kyngas, 2007; Spiggle, 1994). Specifically, propositions from three major theories relevant to competitiveness literature were used to further develop the factors. In addition to the competitive advantage theory (Porter, 1990), comparative advantage theory (Krugman and Obstfeld, 2000) and new growth theory (Krugman, 1991; Romer, 1986) were utilised in the process. Finally, compiling the emerged factors resulted in a formulation of theoretical propositions that formed an updated definition of competitiveness.

3 Analysis of competitiveness definitions

3.1 Analysis of Porter's competitiveness definition

The guiding definition of competitiveness for the inductive analysis was an excerpt from Porter's book, Competitive Advantage of Countries (1990):

> "The only meaningful concept of competitiveness at the national level is productivity. The Principle Goal of a nation is to produce a high standard of living for its citizens…Productivity is the prime determinant of a nation's long-run standard of living, it is the root cause of national per capita income…. A nation's standard of living depends of the capacity of its companies to achieve high levels of productivity and it increase productivity over time …. They must develop necessary capabilities to compete in more sophisticated industry segments, where productivity is generally high" (p.76)

The following concepts were extracted from the Porter's definition: productivity, principal goal of a nation, standard of living, national per capita income, competition, and sophisticated industry segments. Table 1 explains the process of the inductive analysis by presenting excerpts from the definition, showing extracted concepts, and then organising the concepts into higher-order concepts called factors. The three factors that emerged from the content analysis were: principle goal, method, and background. These factors serve as the basis for analysing definitions of competitiveness developed in extant research with the goal to deductively extract additional concepts. A description of the factors follows.

The principle goal factor was defined as a high and growing standard of living. Porter (1990) argued the principle goal of competitiveness can be achieved through domestic industries' productivity growth, which is the method factor. He identified the context as competition among highly productive, sophisticated industry segments. The context constituted the background factor. A categorisation matrix was created based on the content analysis of Porter's competitiveness definition. As a result, three factors of the competitiveness construct were derived (Table 2). The use of a categorisation matrix allowed for a systematic analysis of competitiveness literature and conceptualisation of the three factors, with the goal of building a comprehensive definition of the competitiveness construct (Elo and Kyngas, 2007).

Table 1. Content analysis of the Porter's competitiveness definition

Excerpt from Porter's definition	Concept	Factor
"The only meaningful concept of competitiveness at the national level is productivity."	Productivity	Productivity → Method of achieving competitiveness
"The Principle Goal of a nation is to produce a high and growing standard of living for its citizens."	Principle goal of a nation High and growing standard of living	Principle goal, high and growing standard of living → Goal of competitiveness
"Productivity is the prime determinant of a nation's long-run standard of living, it	Productivity Standard of living	Productivity → Method of achieving competitiveness

is the root cause of national per capita income …”	National per capita income	Standard of living, national per capita income → Goal of competitiveness
“A nation’s standard of living depends on the capacity of its companies to achieve high levels of productivity and to increasing productivity over time …”	Standard of living High and increasing productivity of domestic companies	Standard of living → Goal of competitiveness High and increasing productivity of domestic companies → Method of achieving competitiveness
“They must develop necessary capabilities to compete in more and more sophisticated industry segments, where productivity is generally high.”	Competition Sophisticated industry segments	Competitive nature → Background Sophisticated industry → Background

Source: Porter (1990, p.76)

3.2 Analysis of competitiveness definitions

A total of nine competitiveness definitions were selected from scholarly articles published in academic journals (e.g., Chikán, 2008; Fagerberg, 1988) and books (e.g., European Commission, 1999) until 2008[1] through a key word search by one of the authors (Table 2). Scholarly articles in several databases were searched for definitions of competitiveness using the keyword ‘competitiveness’. The searched databases included: Google Scholar, EBSCO, and ABI/INFORM. The rest of the definitions found in the competitiveness literature either were redundant, or cited one of the nine definitions included in this study[2]. Individual concepts were extracted from the nine competitiveness definitions and categorised according to the three factors identified using the Porter’s definition of competitiveness.

Table 2 Categorisation matrix: analysis of existing competitiveness definitions

Author and source	Definition of competitiveness	Concept	Factor			
			Principle goal	Method	Background	Other
Aiginger (2006 p.162)	[Competitiveness is] “the ability of a country or location to create welfare” measured by a welfare function of income	Welfare creation	+	-	-	-
		Income per capita	+	-	-	-
		Social and distributional indicators	+	-	-	-

	per capita, set of social and distributional indicators, and a set of ecological indicators. Competitiveness can be achieved by generation process, which incorporates physical capital, labor, technical process, capabilities, and trust.”	Ecological indicators Generation process, including capital, labor, technology, capabilities and trust	+ -	- +	- -	- -
Chikán (2008, p.25)	“Competitiveness is a capability of a national economy to operate ensuring an increasing welfare of its citizens at its factor productivity sustainably growing. This capability is realized through maintaining an environment for its companies and other institutions to create, utilize and sell goods and services meeting the requirements of global competition and changing social norms.”	Increasing welfare Growing productivity Global competition Changing social norms Environment to create, utilize and sell goods	+ - - - -	- + - - -	- + + +	- - - - -
European Commission (1999, p.4)	“Competitiveness is defined as the ability to produce goods and services which meet	Production of goods and services for international markets	- +	+ -	- -	- -

	the test of international markets, while at the same time maintaining high and sustainable levels of income or, more generally, the ability of (regions) to generate, while being exposed to external competition, relatively high income and employment level.”	High and sustainable level of income High employment level External competition	 + -	 - -	 - +	 - -
Fagerberg (1988, p.355)	[Competitiveness is defined as] “the ability of a country to realize central economic policy goals, especially growth in income and employment, without running into balance-of-payments difficulties”	Income growth Employment growth Balance of payments	+ + -	- - +	- - -	- - -
Hatsopoulos et al. (1988, p.299)	“The proper test of competitiveness…is not simply the ability of a country to balance its trade, but its ability to do so while achieving an acceptable rate of improvement in its standard of living.”	Balance in trade Growing standard of living	- +	+ -	- -	- -
Kohler (2006, pp.4–5)	“A country’s ability to generate sustained	Country welfare	+ +	- -	- -	- -

	economic well-being for its citizens, with a minimum degree of inequity regarding personal or regional distribution of income and wealth… A country's welfare is determined by its absolute level of productivity."	Sustainable economic well-being Personal and regional equity in income and wealth distribution Absolute level of productivity	+ -	- +	- -	- -
Krugman (1996, p.18)	"Competitiveness is a poetic way of saying productivity."	Productivity	-	+	-	-
Oughton and Whittam (1996, p.59)	"Long-run growth in productivity and hence rising living standards consistent with increasing employment or the maintenance of near full employment."	Long-run productivity growth Increasing living standards Increasing employment Maintaining near full employment	- + + +	+ - - -	- - - -	- - - -
Von Tunzelmann (1995, p.2)	"Historians have tended to equate competitiveness…with political, technical, commercial leadership"	Political leadership Technical leadership Commercial leadership	- - -	- - -	- - -	+ + +

As the analysis of existing competitiveness definitions indicates (Table 2), most definitions did not incorporate all three factors, with the exception of definitions provided by Chikán (2008) and the European Commission (1999). These two sources defined competitiveness similar to Porter, integrating all three factors – principle goal, method, and background. The rest of the definitions included only one or two of the three factors. Almost universally, the definitions included the same two factors – principle goal and method. For example, Aiginger (2006), Fagerberg (1988), Hatsopoulos et al. (1988), Kohler (2006), and Oughton and Whittam (1996) included the principle goal and method factors. Krugman (1996) mentioned only the method factor, and Von Tunzelmann's (1995) definition is solely based on different types of leadership, which is categorised as 'other' factor in the matrix. The matrix analysis demonstrates a high consistency among scholars in defining competitiveness: they almost uniformly relied on concepts that constitute the principle goal and method factors. Concepts that describe environment, or the background factor, were included in the competitiveness definitions less frequently. However, it is critical to account for characteristics of the new global environment when defining and assessing competitiveness.

Conceptualisation of the three factors, however, varied substantially among the definitions. The greatest variety was in conceptualising the principle goal factor, defined as (Table 2):

- welfare (Aiginger, 2006; Chikán, 2008; Hatsopoulos et al., 1988; Kohler, 2006; Oughton and Whittam, 1996)
- income per capita (Aiginger, 2006; European Commission, 1999; Fagerberg, 1988; Kohler, 2006)
- employment (European Commission, 1999; Fagerberg, 1988; Oughton and Whittam, 1996)
- social and distributional indicators (Aiginger, 2006; Kohler, 2006)
- ecological indicators (Aiginger, 2006).

Method factor was defined either as productivity (Aiginger, 2006; Chikán, 2008; Kohler, 2006; Krugman, 1996; Oughton and Whittam, 1996), or as trade balance (European Commission 1999; Fagerberg, 1988; Hatsopoulos et al., 1988). The background factor was described as global competition (Chikán, 2008; European Commission 1999; Fagerberg, 1988; Hatsopoulos et al., 1988) and changing social norms (Chikán, 2008).

3.3 Concpetualisation of the three competitiveness' factors

3.3.1 The principle goal of competitiveness

Seven out of the nine competitiveness definitions included the principle goal factor (Table 2). However, the definitions relied on different concepts to define the factor. A comparative analysis of the different concepts used by scholars to define the principle goal factor was performed in order to determine the origins of the discrepancy (Spiggle, 1994) and propose final concepts to represent the principle goal factor.

The analysis of the principle goal concepts showed that two levels of abstraction were used by scholars: specific and general (Table 2). The principle goal factor's level of abstraction was categorised as specific when the concept was represented by a precise and explicit indicator that had only one meaning and could be measured relatively easy and objectively. Concepts were categorised as general when they represented broad issues that might have a wide-range of meanings, and there was no simple and unambiguous way to measure them (Table 2).

Concepts categorised as general included: standard of living, welfare, economic well-being, social and distributional indicators, and ecological indicators (Table 2). The group of specific concepts included: income, employment, and distribution of wealth. One common element in conceptualising the principle goal factor was: almost every definition had two levels of abstraction and included both specific and general concepts, with the exception of Hatsopoulos et al. (1988). The majority of the definitions used multi-level concepts to define the principle goal factor, incorporating specific concepts to explain more general concepts. For example, Aiginger's (2006) definition includes general concepts – welfare and distributional and ecological indicators – as well as a specific concept, income per capita. It should be noted that even though none of the definitions utilised the same set of general and specific concepts to explain the competitiveness construct's principle goal factor, the majority of the concepts were closely related, for example, well-being and welfare. Based on the definitions' analysis, the present study defined the principle goal of competitiveness as a multi-level factor that should include both general and specific concepts.

The relationships between the concepts in the principal goal factor of competitiveness have been discussed by various scholars. Frey and Stutzer (2002) argue that standard of living is defined as happiness, also called utility in economics. Utility is primarily dependent on economic factors, such as income and employment, but subjective factors, such as good governance and social capital also play a role (Frey and Stutzer, 2002). Scholars generally agree that level of income is a primary factor determining national standard of living, but equity in income distribution and employment level must be taken into consideration as well (Aiginger, 2002). For example, people with higher income are happier than poorer people because they can "buy more material goods and services" and have "a higher social status" [Frey and Stutzer, (2002), p.409]. It is also believed that an individual's standard of living is relative: "individuals compare themselves to other individuals" [Frey and Stutzer, (2002), p.411]. This lingers to the importance of equity in income distribution – people in a nation with great gaps in income distribution feel they are relatively poorer than others, which lowers their perceived standard of living (Aiginger, 2006; Kohler, 2006). Frey and Stutzer (2002) also note that employment plays a role because unemployment produces not only income loss, but also psychic cost, such as 'depression and anxiety', and loss of self-esteem and personal control (p.421).

Based on the definitions' analysis and theoretical discussions by Aiginger (2006), Frey and Stutzer (2002), and Kohler (2006), in the present study the national standard of living concept was selected to define the general level of the principal goal factor. Further, income per capita, equity in income distribution, and employment level were selected as specific concepts defining the principal goal of competitiveness. Both general and specific level concepts were combined to formulate a proposition of the principle goal factor:

1. The principle goal of competitiveness is to achieve a high national standard of living through high income per capita, income distribution equity, and high employment level.

3.3.2 Method for achieving competitiveness

The most controversial issue in the competitiveness discourse has been around how to achieve the principle goal of competitiveness, or the method of attaining high standard of living (Krugman, 1994). The method factor was included in eight out of the nine competitiveness definitions examined in this study. This section reports results of an analysis of the concepts used to define the method factor. The analysis draws on extant competitiveness literature and comparative advantage theory.

In previous studies, two prevalent concepts were used to define the method factor: trade and productivity (Table 2). The two methods for achieving the principal goal factor of competitiveness were:

1. selling products to world markets, measured by trade balance (European Commission, 1999; Fagerberg, 1988; Hatsopoulos et al., 1988)
2. effective use of input factors in the production process, called productivity (Aiginger, 2006; Chikán, 2008; European Commission, 1999; Kohler, 2006; Krugman, 1996; Oughton and Whittam, 1996; Porter, 1990).

Table 2 compares these two approaches to conceptualise the method for achieving the principle goal of competitiveness, as presented in the existing definitions of the construct.

Table 3 The principle goal factor of competitiveness

Author	Sub-concept	Level of abstraction	
		Specific	General
Aiginger (2006, p.162)	Welfare creation	-	+
	Income per capita	+	-
	Social and distributional indicators	-	+
	Ecological indicators	-	+
Chikán (2008)	Welfare	-	+
European Commission (1999, p.4)	Level of income	+	-
	Employment level	+	-
Fagerberg (1988, p.355)	Central economic policy goal	-	+
	Income growth	+	-
	Employment growth	+	-
Hatsopoulos et al. (1988)	Standard of living	-	+
Kohler (2006, pp.4–5)	Economic well-being	-	+
	Personal and regional equity in income and wealth distribution	+	-
Oughton and Whittam (1996)	Living standard	-	+
	Employment level	+	-
	Near full employment	+	-

Table 4 Methods for achieving competitiveness

Author	Description	Method	
		Trade	Productivity
Aiginger (2006)	Generation process including capital, labor, technology, capabilities, and trust	-	+
Chikán (2008)	Factor productivity	-	+
European Commission (1999)	Production of goods and services for international markets	+	+
Fagerberg (1988)	Balance of payments in trade	+	-
Hatsopoulos et al. (1988)	Balance of payments in trade	+	-
Kohler (2006)	Productivity	-	+
Krugman (1996)	Productivity	-	+
Oughton and Whittam (1996)	Productivity growth	-	+

When interpreting the method factor of competitiveness, some scholars argue for the trade perspective (European Commission, 1999; Fagerberg, 1988; Hatsopoulos et al., 1988). The European Commission's (1999) definition is a good example explaining this method:

> "Competitiveness is defined as the ability to produce goods and services which meet the test of international markets, and at the same time maintain high and sustainable levels of income or, more generally, the ability of (regions) to generate, while being exposed to external competition, relatively high income and employment levels." (p. 4)

Scholars, who support the trade perspective, reason that countries with a trade surplus have greater competitiveness than countries with a trade deficit (Clark and Guy, 1998). This is based on the assumption that if a country has a trade surplus and earns more than it spends in trade, its production process is superior to its foreign counterparts. In this case, the country earns more for its workers. Thus, superiority in trade translates into a growing standard of living for its citizens (Krugman, 1996). Hence, the trade perspective assumes if a country has a trade surplus, it achieves the principle goal – providing a high standard of living for its citizens, which indicates a high level of competitiveness.

To examine the rationale behind the trade perspective, the relationship between trade and the principle goal of competitiveness was further analysed, based on the comparative advantage theory (Krugman, 1996), one of the most influential theories explaining the mechanism of trade among countries (Leamer, 1984). According to the theory, trade depends on the final price of products determined by countries' relative labour productivity (Krugman, 1994; Krugman and Obstfeld, 2000; Verma, 2002). Labour productivity is positively related to the price of final products because high productivity is a result of more sophisticated machinery or capital investment, such as R&D (Krugman and Obstfeld, 2000). According to Krugman and Obstfeld (2000), countries have a trade surplus in two product categories:

1. products based on high labour productivity
2. products manufactured with low labour productivity, but lower labour and other production costs relative to other countries in the world market.

In other words, if a country has a trade surplus, its industries are either highly labour-productive or highly cost competitive, or both.

A problem with this logic is trade surplus can be either beneficial or harmful to competitiveness because it can result either in an increase or decrease in a nation's standard of living, which defines the principle goal of competitiveness. For example, if a country has a comparative advantage in labour cost and views increasing trade surplus as a way to improve its competitiveness, it might become interested in maintaining or further lowering labour costs to decrease product prices and increase the amount of exports (Davies and Ellis, 2000). This strategy might increase the country's trade surplus, but will deteriorate its citizens' income and standard of living, which contradicts the principle goal of competitiveness. Furthermore, lowering labour cost and sacrificing standard of living to increase trade surplus can be a 'dangerous obsession' [Krugman, (1994), p.28]. Governments with trade balance priority can create a vicious circle of price competition, and eventually destroy both economic and diplomatic relations with other countries. Therefore, trade perspective based on lowering labour and production costs cannot be used to explain the method of achieving principle goal of competitiveness. However, trade perspective, based on achieving a trade surplus as a result of higher productivity is a different argument discussed next.

Productivity is the second method of achieving high competitiveness (Table 2). A basic definition of productivity is the ratio of outputs to inputs, the latter traditionally viewed as labour and capital (Coelli et al., 2005). An industry with high productivity has a very efficient production process of converting inputs into outputs. In comparison with competitors, the industry can produce more output with the same inputs. Workers in highly productive industries earn higher wages, leading to a higher standard of living and quality of life because they have more income to purchase goods and services and enjoy more leisure time (Porter, 1990). A country with highly productive industries has high income levels that support high quality public services, which, in turn, substantially increases the standard of living of its citizens (Porter, 1990). Therefore, the growth of domestic industries' productivity helps achieve the principle goal of competitiveness. Productivity growth results in growing wages for workers, a higher standard of living, and a higher quality of public services (Coelli, 2005).

Ezeala-Harrison (1995) conducted an interesting study that compared trade balance and productivity in relationship to the principle goal of competitiveness, measured by the gross national income per capita. The author found that productivity was highly related to the principle goal of competitiveness of Canada, whereas, trade balance was not. Between 1962 and 1988, the gross national income per capita increased, although Canada experienced a growing trade deficit and poor performance in its world's export share. In contrast, national productivity measured by total output per capita increased steadily during the same period (Ezeala-Harrison, 1995). Based on the extant theoretical and empirical research, the following proposition was formulated to define the method of achieving the principal goal of competitiveness:

2. High and growing productivity is the method to achieve the principle goal of competitiveness.

3.3.3 Competitiveness' background

Only three out of the nine competitiveness definitions examined in this study included a concept that described background or environment (Table 1). To define the background factor with respect to competitiveness, scholars used three concepts:

1. increasing global/external competition (Chikán, 2008; European Commission, 1999)
2. increasing competition among highly sophisticated industry segments (Porter, 1990)
3. changing social norms (Chikán, 2008).

The proliferation of international competition resulting from rapid globalisation and its effect on domestic industries has driven the importance of competitiveness (Pederson, 2010). Brady et al. (2005) defined globalisation as: "the intensification of international economic exchange and the label for the contemporary era of international economic integration" (p. 922). Countries began to open domestic markets and lower trade barriers for goods, as well as services, with the help of decreasing transportation costs and increasingly sophisticated means of communication (Gilpin, 2001).

In the definitions of competitiveness, the background factor was conceptualised as increasing global competition (Chikán, 2008; European Commission, 1999) and focused on 'intensified economic exchange', which further increased global competition through trade. However, these definitions seem to omit 'economic integration' happening under globalisation [Brady et al., (2005), p.922]. Porter (1990) complemented these definitions by introducing a trade specialisation perspective in a new global competitive background. He argued that globalisation is not all about how many products a country can export to other countries, but rather a new paradigm shift in economic activities, when a country is assimilated in the world's economy. A result of economic integration is a global industry restructuring – many developed countries relocated production operations to countries with comparative advantages in labour costs (Davies and Ellis, 2000; Rantisi, 2002). Consequently, worldwide, countries specialise in what they do well. Industries in developed countries specialise in highly sophisticated, capital intensive production, while industries in developing countries specialise in labour intensive production (Davies and Ellis, 2000; Gilpin, 2001; Porter, 1998; Rantisi, 2002).

In the new growth theory, Krugman (1990) and Romer (1986) proposed that knowledge significantly increases production output in an industry, even with the same amount of traditional inputs, such as labour and capital and, subsequently, the industry competitiveness increases substantially, especially in highly sophisticated sectors (Krugman, 1999; Romer, 1986). This is because many countries, especially developed countries, have a comparative disadvantage in labour and the effect of capital investment in these countries' manufacturing industries to increase productivity is saturated (Dickerson, 1999; Jones, 1998). Based on the new growth theory and extant research, a proposition to describe competitiveness' background was developed:

3. In the new global environment, knowledge becomes a central factor in determining competitiveness.

3.4 An updated definition of competitiveness

Based on the content analysis of the nine competitiveness definitions, three core factors were identified:

1. principle goal
2. method
3. background.

Further, drawing on extant theoretical and empirical research, the factors were conceptualised as follows. The principle goal factor is a high standard of living determined by income per capital, employment, and income distribution equity. The method factor explains that competitiveness can be achieved through high and growing productivity in the process of fulfilling the principle goal. The background factor defines the new global environment where knowledge, or the way inputs are converted into outputs, becomes critical in determining countries' and companies' competitiveness. Combining the propositions on the three core competitiveness factors, an updated definition of the competitiveness construct was formulated:

> "Competitiveness is an ability to achieve a high standard of living through productivity growth in the new global environment, where knowledge becomes a critical factor."

4 Conclusions and policy implications

Drawing on three theories and extant empirical research, this study revisited the competitiveness construct focusing on its meaning and definition in the new global environment. Based on a systematic content analysis of existing competitiveness definitions, this study identified three core factors that define the construct and clarified concepts used to formulate each of the factors. This research bridges a gap in the competitive advantage theory (Porter, 1990) and the comparative advantage theory (Krugman and Obstfeld, 2000) that did not account for the current globalised economy by including knowledge in the definition of competitiveness. In this study, we identified where the current competitiveness theory building process was and added to the efforts to formalise the competitiveness theory by deducing the term of the competitiveness construct. Based on the theoretical clarification and an updated definition of competitiveness, governments officials interested in increasing national competitiveness, might find this research result useful to formulate a strategy in support of domestic industries. They might use the results from this study to develop and implement appropriate competitiveness strategies. Specifically, instead of focusing solely on achieving or maintaining a positive trade balance, they might instead focus on enhancing industries' productivity. Further, to attain competitiveness in the new global environment, focus on traditional input factors, such as labour and capital, might not be successful. Instead, industrial policies should emphasise the knowledge factor, determining how the traditional inputs, labour and capital, are converted in output. The updated definition of competitiveness stresses the importance of know-how and R&D in achieving the principal goal of competitiveness, an increasingly high standard of living. Having a clear goal of what a country (industry or company) tries to achieve will provide a direction for effective distribution of limited resources.

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Notes

1. Only definitions until 2008 were used because the data collection of this research conducted in 2009.
2. For example, the definition of the World Economic Forum – competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country – is not included in this study because it is redundant to Krugman's definition that says competitiveness is a poetic way of saying productivity, which is included in this research.