

# Productivity Measurement in Tourism: The Need for Better Tools

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## Abstract

It is the goal of this article to provide noneconomists with an overview of productivity, its measurement and challenges specific to tourism, and the current state of research. The focus is on macroeconomic considerations, not firm-specific productivity. A survey of Organization for Economic Cooperation and Development member and nonmember countries identifies the main input and output measures used as well as the inconsistencies in their application and the data gaps that still need to be addressed. Other research issues yet to be resolved include how to capture the quality aspects of both input and output variables as well as the cocreated value of experiences that are consumed at the moment of production.

## Keywords

productivity, productivity measurement, tourism labor productivity, productivity of experiences

## Introduction

Productivity, the factors that enhance or hinder its growth, and its relationship to living standards has a long history in academic research, especially as part of the economic sciences. The study of productivity can be traced back to the beginnings of mass production and the “manufacturing paradigm” where the main inputs—labor and capital, usually defined as equipment and technology—can be fairly easily captured and quantified. Therefore, in manufacturing, the traditional approach to enhancing productivity is to replace labor with capital. Although services now comprise a large majority of the gross domestic product (GDP) in most developed countries, interest in this sector by economists and policymakers has lagged behind the sector’s rapid expansion, and the concept of services productivity has largely been neglected (Filiatrault, Harvey, and Chebat 1996; Rutkauskas and Paulavičienė 2005).

The complexity of unraveling inputs and outputs in the service economy and determining appropriate measurement tools precludes it from the classic treatment given to the concept of productivity by economists. Samuelson (1962 as cited by Abramovitz and David 1973) refers to productivity as a “growth fable” and “a parable agreed upon” (p. 428) whereby the rate of return on capital and the savings rate remain constant while technological progress continues to increase the efficiency of labor (Sigala 2003). However, this is not to say that there is no consensus on the operative forces in an economy. The accumulation of physical and human capital, technical progress, and enterprise and institutional arrangements has contributed in various ways to the transformation of industrial processes.

Despite more than 200 years of writings about productivity, few are available to those outside the economic sciences

to explain what it is (and is not), its component parts and the roles they play in different sectors of the economy, and how changes in productivity are measured. The purpose of this paper is to provide such an understanding. After presenting a broad review of concepts of productivity, productivity in services, and some of its drivers at the macro level, we focus on the tourism industry and how measuring its productivity is in some ways even more difficult than that of services in general. A discussion of measurement approaches, their strengths, and shortcomings that contribute to the perception of low productivity in the tourism industry then leads to a review of approaches used by Organization for Economic Cooperation and Development (OECD) countries and the identification of major unresolved issues. Finally, we discuss some policy options to raise awareness of the general need to improve both productivity and its measurement.

## What Is Productivity?

The concept of productivity deals with the operational performance of a firm (micro-level) or country (macro-level) and is usually defined as a ratio between the output volume and the volume of inputs. That is to say, it measures the

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efficiency and effectiveness with which production inputs are used in an economy to produce a given level of output (OECD 2001). Productivity improvement is the result of managing and intervening in the transformation of work processes either by reducing the inputs needed to create the same output or by generating more output from a given set of inputs. The concept of productivity emanates from research in the manufacturing sector, particularly during the Fordist period when mass consumption combined with mass production produced sustained economic growth and widespread material advancement during the period from the 1940s to the 1960s (Adam, Johanson, and Gravesen 1995; Jones and Hall 1996; Thompson 2003).

Productivity is studied, and measured, both at the firm level to determine both operational and financial performance ranging from an individual to the firm as a whole and at the national level to determine the productivity of particular sectors as well as the country as a whole. It is considered a key source of economic growth and competitiveness and, as such, is basic statistical information for many international comparisons and country performance assessments, such as the standard of living (OECD 2001).

The main inputs considered in manufacturing are labor and capital. However, land, facilities, equipment, tools, energy, materials, and information can also be important inputs. Using capital in the form of equipment and technology has been the traditional approach to reducing labor costs and, hence, enhancing productivity. Innovative activity, commonly measured through investments in research and development, has been shown to be one of the main sources of technological progress, (OECD 2002). Although closely linked, *productivity* is distinct from *efficiency* (the degree to which an activity generates the largest possible outputs from a given quantity of inputs or “doing things right”; cf. Anthony 1965; Vuorinen, Järvinen, and Lehtinen 1998) and *effectiveness* (the ability of the organization to attain its specified objectives or “doing the right things”; cf. Adam, Johanson, and Gravesen 1995; Vuorinen, Järvinen, and Lehtinen 1998). As we shall see, it is also possible to increase productivity while reducing effectiveness.

### What Are the Distinguishing Characteristics of Productivity in Services?

The productivity of manufacturing organizations can be measured in quantitative units of input (e.g., purchased resources) and output (e.g., products sold). However, for service organizations, it is not only necessary to add a customer perspective, but there is a concomitant need to improve service quality in an effort to boost productivity (Rutkauskas and Paulavičienė 2005; Sahay 2005). The unique characteristics of services, including intangibility, simultaneous production and consumption, perishability, and heterogeneity,

compound the complexity of capturing productivity in services. Furthermore, the integration and involvement of consumers in the value creation process is central to services (Lasshof 2006).

Although it has been argued that quality is in the eye of the consumer or the difference between expectations and perceived performance (Parasuraman, Zeithaml, and Berry 1988), Vuorinen, Järvinen, and Lehtinen (1998) suggested, “it may be impossible to separate the impact of a service process on conventional productivity from its impact on service quality” (p. 380). Accordingly, they defined service productivity as:

$$\text{Service Productivity} = \frac{\text{Quantity of Output} + \text{Quality of Output}}{\text{Quantity of Input} + \text{Quality of Input}}$$

However, Grönroos and Ojasalo (2004) felt that “service productivity is a function of (1) how effectively input resources into the service (production) process are transformed to outputs in the form of services (internal efficiency), (2) how well the quality of the service process and its outcome is perceived (external efficiency or effectiveness), and (3) how effectively the capacity of the service process is utilized (capacity efficiency)” (p. 414). Consequently, they defined the concept as (p. 417)

$$\text{Service productivity} = f \left( \begin{array}{l} \text{internal efficiency,} \\ \text{external efficiency,} \\ \text{capacity efficiency} \end{array} \right)$$

Although there is dissent about whether the quality of the output can, or should, be separated from productivity (cf. Grönroos 1990; Grönroos and Ojasalo 2004; Lasshof 2006), researchers agree that both output and input must be taken into consideration to ensure constant improvement of productivity to achieve long-term service provider advantages for enterprises (Grönroos 1990; Grönroos and Ojasalo 2004; Lasshof 2006). There is also agreement that, ultimately, the desire for optimized production processes wins; that is, the pursuit of an increase in service provision efficiency in terms of profitability and productivity dominates, since unproductive actions can lead to suboptimal resource allocation and competitive disadvantages (Lasshof 2006, p. 1). Whereas in the classical concept of productivity the customer can neither perceive nor influence the quality of material products and business processes (Grönroos and Ojasalo 2004), service providers must integrate and involve the consumer in the value creation process. Hence, labor is considerably more important as an input in services since the quality of the output (i.e., the quality of the service as perceived by the consumer) is largely a result of the performance of personnel (cf. Vuorinen, Järvinen, and Lehtinen 1998) and coproduction by consumers (Lasshof 2006). Indeed, Anderson, Fornell, and Rust (1997) demonstrated that, for many services, customer satisfaction is related to the degree of customization employed to meet the heterogeneous needs of consumers.

Productivity improvements in services are thus far more challenging (Anderson, Fornell, and Rust 1997). Research has shown, for instance, that value added rose significantly with an increased number of employees (Brown and Dev 2000), and that education affected productivity (Marchante and Ortega 2012). Therefore, productivity from the consumer's perspective—the ratio of the output the consumer experiences to the inputs she or he has provided as a coproducer of the service—can suffer greatly when traditional manufacturing product improvement techniques, such as reducing labor costs, are applied (Grönroos 1990; Grönroos and Ojasalo 2004; Parasuraman 2002; NZTRI 2007), and striking an appropriate balance between efficiency and effectiveness—operational versus customer productivity—is critical in services (Johnston and Jones 2004).

### What Makes Tourism Different from Other Services?

In contrast to production-oriented sectors such as agriculture or commercial goods, tourism is a social phenomenon rather than an economic one, and its volume and structure are defined on the basis of consumption generated by tourists. Isolating consumption by tourists from that of nontourists (e.g., local residents) or those who are not final consumers (e.g., tour operators) creates an additional challenge. For instance, a hotel room can be sold to a tourist who made the reservation directly with the hotel, a resident who is spending a night away from home for a variety of reasons, or a tour operator who has resold it as part of a package. Moreover, end-users, whether tourists or nontourists, expect more than just the delivery of a service, thereby pushing producers up the value chain. Producers must add value to services by creating experiences (Pine and Gilmore 1999) in specific environments or repackaging a range of tourist services (Richards 2011). Poulsson and Kale (2004, p. 270) defined an experience as “an engaging act of co-creation between a provider and a consumer wherein the consumer perceives value in the encounter and in the subsequent memory of that encounter.” They clearly distinguished between services as “something done *for* [emphasis added] you” and experiences as “something done *to* [emphasis added] you” that leaves the recipient with a memory (p. 271). In other words, while goods, services, and experiences all have a consumption phase, consumption is the main product for experiences (p. 271) and thus for tourism.

Based on interviews with experience providers, Poulsson and Kale (2004) identified five elements that contribute to a successful experience, including (pp. 272-73)

1. Personal relevance: an individual's internal state of arousal, activation, and preparedness to engage in a specific experience that impacts their involvement in the experience and how its quality is perceived

2. Novelty: the change in stimulus conditions from previous experiences (i.e., the degree to which it is new to the consumer)
3. Surprise: an outcome that is both unexpected and contrasts with the dominant expectations of the consumer
4. Learning: an activity that adds to the richness of the experience, but the activity must be personally relevant and the consumer must be able to control the learning environment
5. Engagement: the result of interacting with a consumer, actively seeking their participation in something that is meaningful to them, and providing feedback.

The more of these elements that are present, the more intensely the experience will be felt (Poulsson and Kale 2004).

The successful delivery of experiences also requires behaviors on the part of employees that fall under the dimension of organizational citizenship behavior (OCB), which is defined as “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization” (Organ 1988, p. 4).

### The Critical Role of Human Resources in Improving Tourism Productivity

A number of research projects in different countries have addressed what drives productivity improvements and the role of changes in physical capital, innovation, and the competitive environment (Assaf and Josiassen 2012; Barros and Alves 2004; Blake, Sinclair, and Campos Soria 2006; Crouch 2011; Smeral 2007; Weiermair 2004). Others have focused on drivers that include information and communication technology, size of firm, competition versus cooperation, and clustering (Ottenbacher 2007; Ottenbacher and Gnoth 2005; Scaglione and Johnson 2007; Sigala et al. 2004; Siguaw, Enz, and Namasivayam 2000; Sharpe 2006; Tyrrell and Martens 2007). Each of these factors has been shown to play a more or less important role in influencing levels of productivity.

However, most research in this area focuses on the critical role played by human capital (cf. Blake, Sinclair, and Campos Soria 2006; Brown et al. 2009; Koys 2003; Smeral 2007). Indeed, research has shown that productivity growth is more likely to come from innovations that result in enhanced product and service quality than from cost-cutting (Chen and Soo 2007). According to Bhagwati (1984), this is typical of “person-embodied services” (i.e., services where there is no spatial separation between production and consumption), that usually require personal contact, as is the case with tourism experiences. Therefore, embodied services provide fewer

opportunities for productivity driven by technological progress. Furthermore, as Weiermair (2004) found, there is a negative correlation between firm size and innovative activity. Often, only large conglomerates can effectively utilize and enhance workers' abilities and thus drive innovation (Siguaw, Enz, and Namasivayam 2000). Unfortunately, the limited number of large tourism businesses has adverse implications for innovation.

A considerable number of misconceptions about the productivity of the tourism workforce exist. For instance, the reliance on young workers, the high proportion of part-time workers, and the participation of women are often seen as negative influences. However, research has provided some interesting findings that should be explored further to determine whether they can be validated in today's economy, this industry, and across countries. For example, Kotlikoff (1988) found that "for young workers, compensation (earnings plus pension accrual) is below productivity and for older workers compensation exceeds productivity" (p. 2). In Spain, workers under 35 years of age earn 75.1% of the average monthly salary of those who are 35 years of age and over (Federación Estatal de Hostelería 2010). Given the reliance on younger workers in hospitality and the general aging of developed economies, it is expected that the sector will find it increasingly difficult to attract and retain employees from the younger age group, and that this will impact its productivity.

If inferences can be drawn from other industries (e.g., Nelen, de Grip, and Fouarge 2009, who studied the productivity of Dutch pharmacy assistants), then the statistically significant finding that firms that have a "large share of part-time employment are more productive than firms with a large share of full-time employment" (p. 2) should be investigated further. A partial explanation may come from human resource management literature from China (Zhu, Yang, and Wang 2004) that refers to a concept called the "catfish effect" which suggests that strong competitors force the weaker ones to improve. Part-time employees generally have less job security than full-time employees. Consequently, they are considered to be more vulnerable ("weaker"), thereby forcing them to be more productive in an effort to retain their jobs.

It has also been suggested that having a higher proportion of women employees increases labor productivity. Rosener (1997) attributed this to women's workplace qualities, such as tending to take a more holistic approach to decision making and problem solving, showing greater awareness of subtle body language, relying on intuition, having proven abilities for multitasking, and adopting a more inclusive management style. Others (Hellerstein, Neumark, and Troske 1999 as cited in Li and Prescott 2010) have shown that "for the most part, the lower relative earnings of women are not reflected in lower relative marginal products" (p. 6). In Spain, it was reported that females earn 76.52% of the average monthly salary of males (Federación Estatal de Hostelería 2010).

The higher proportion of migrant or immigrant workers is generally believed to have negative implications for the

sector's productivity, especially where there are language barriers and a lack of credentials and/or relevant work experience. However, work undertaken by Li and Prescott (2010) based on Canada's human resource module and national tourism indicators suggested that, in Canada, "immigrant workers enhance productivity. It is impossible to say precisely how this effect may come about, but it is not necessarily inconsistent with . . . literature [that] finds immigrant wages are low relative to the wages of native born Canadians with similar characteristics" (p. 20). Whether this is true in other countries is unclear. Nonetheless, it is conceivable that migrants and immigrants are generally paid less than their qualifications and experience might warrant.

## Measuring Productivity

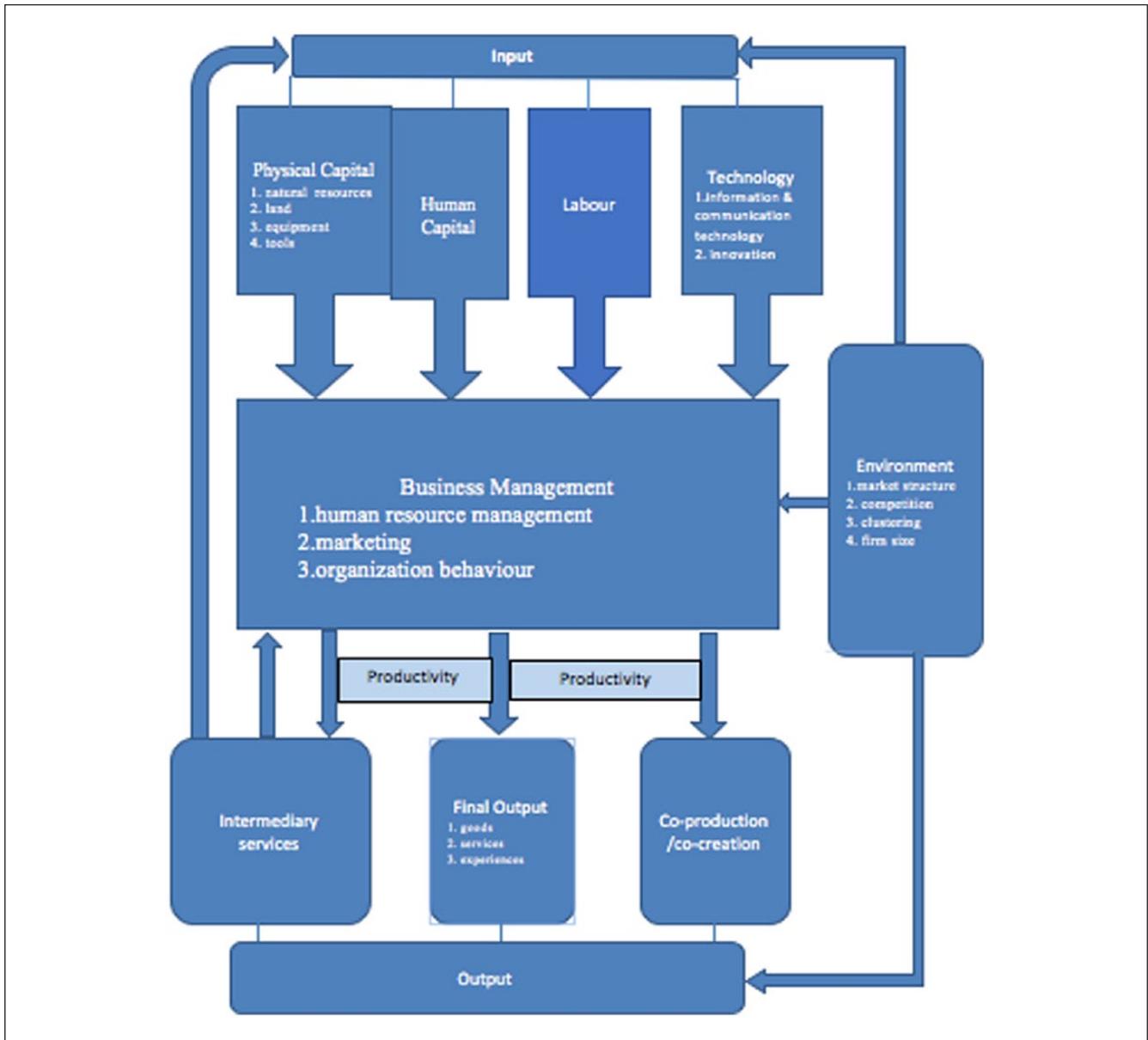
There are essentially three difficulties in measuring productivity in services in general and tourism in particular: (1) identifying appropriate inputs and outputs, (2) determining appropriate measures of those inputs and outputs, and (3) ascertaining appropriate ways of measuring the relationship between inputs and outputs (Anderson 1996 as cited in Li and Prescott 2009).

Selection of suitable measures of productivity depends on the purpose of the productivity measurement and/or data availability. Ultimately, all aspects—inputs, intermediary products (materials, components, supplies, energy, and services purchased from other producers), and output—require acceptable measures that can be compared across units, sectors, and countries. Many of the tangible elements used in the production of experiences are less important than they might be in manufacturing.

### *Inputs: Capturing Labor Productivity and Changes in Quality*

The total inputs of the factors of production consist of labor and capital, including natural resources, structures, equipment, and inventories. However, not all of these are tangible elements. For instance, service culture is an important intangible element for service sector production, but it is extremely challenging to quantify its value. Labor input is generally measured in terms of hours worked by all persons engaged in production (Kendrick 1989). Nonetheless, such a measurement is not accurate since differences in workers' educational attainment, skills, and experience must also be considered (Diewert 2008). Furthermore, the tourism industry in particular is heavily reliant on self-employed as well as unpaid family workers, neither of which is captured by available labor force statistics. To solve these problems, some analysts weight labor hours by the average hourly compensation by industry, occupation, and other significant classifications, including levels of education and experience.

A high proportion of certain outputs of the tourism industry are used as intermediate inputs elsewhere, which



**Figure 1.** Determining factors of productivity in tourism.

renders measurement even more difficult because data on intermediate inputs are harder to obtain compared with data on final outputs (Maclean 1997). In many industries of the service sector, more than half of their outputs are used as intermediate inputs. For example, more than 75% of transportation output is used as intermediate inputs, and more than four-fifths of business services output is used as intermediate input in other industries and sectors (Li and Prescott 2010). Indeed, the tourism industry is heavily reliant on intermediaries such as tour operators and travel agents who bundle and resell products and services as part of packages, as well as other industries that account for much of the business in the tradeshow, convention, and

meeting industry. The relationships of these inputs and the factors that influence them are illustrated in Figure 1.

*Outputs: Capturing the Relationship between Producers and Consumers*

Services cannot be traded or sold independently of their production and consumption. Therefore, the output for services must capture the value consumed at the moment of production. Unlike the need to quantify manufacturing output, the volume of service output is not usually important to the customer since she or he normally purchases only one unit of output or package of service at a time. Consequently, it is

very difficult to achieve any economies of scale, except for some administrative, purchasing, and marketing functions, because service providers “cannot concentrate all their production in a single location of their own choice, or fix their production schedules independently of their customers” (Hill 1999, p. 443).

Furthermore, as Grönroos and Ojasalo (2004) have demonstrated, delineating one unit of service output is rarely possible. Hence, normally only partial measurement of service output can be achieved (e.g., “how many customers are served per period by one waiter in a restaurant,” p. 415). The authors suggested that while this “may be [an] interesting [piece] of efficiency information” (p. 415), it provides “no information about how effectively the service operation as a whole transforms all used input resources into customer value” (p. 415). In tourism, GDP, arrivals of visitors, and tourism receipts are often taken to be the outputs of the industry.

### *Productivity: Variations on a Theme*

In practice, the simple ratio of output to input used at the industrial level has been modified to cover a wide range of definitions. The two main types of variation are total productivity (TP) and partial factor productivity (PFP).

Total productivity is the ratio of output of goods and services divided by the sum total of labor, capital, intermediate goods and services, material, energy, and residual factors (i.e., goods and services that are trivial to production). Frequently used at the company or plant level, TP allows management to analyze the savings achieved in the use of purchased goods and services as well as of factor inputs per unit of output. This relationship can be illustrated as follows:

$$TP = \frac{O}{L + C + I + M + E + R},$$

where O is the output goods and services, L is the labor, C is the capital, I is the intermediate goods and services, M is material, E is energy, and R is the residual factors. In contrast, partial factor productivity relates output to a single production factor, with the most common PFP measure being labor productivity (LP) or the ratio of a volume measure of output (O) to a volume measure of labor (L):

$$LP = \frac{O}{L}.$$

Labor productivity is most significant for determining potential growth in living standards as higher levels of per capita income require more output to be produced by labor (Sharpe 2000). Also, considering the critical importance of human capital to the rendering of experiences in tourism, LP should be the most important measure to evaluate the productivity of this sector.

However, Sigala et al. (2004) suggest that “aggregated metrics of productivity inputs and outputs tend to obscure

information, while partial metrics tend to hide information, trade-offs, and complementarities” (p. 181).

## **Tourism Productivity Measurements in OECD Countries**

As a component of the 2010 work plan of the OECD Tourism Committee, a survey was conducted among 35 OECD member and nonmember countries that partially addressed the measurement of productivity in the tourism industry. The following 28 countries responded to the questionnaire for an 80% response rate: Australia, Austria, Canada, Czech Republic, Egypt, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, and Turkey.

Since tourism is a social phenomenon to which organizations respond by providing goods, services, and experiences, national accounts do not identify “tourism” as a sector (see Frechtling’s 2010 “primer” on the need for a tourism satellite account [TSA]), it is very difficult to obtain data for the tourism industry as a whole. Indeed, only the “hotel and restaurant sector” is somewhat consistently captured. However, even this terminology is not uniformly used by statistical agencies in various countries. Some refer to “lodging” or “accommodation” rather than “hotels,” a term that may include other short stay accommodations (e.g., boarding houses, motels, tourist camps, holiday centers). Similarly, “restaurants” are referred to as “restaurants, bars and cafés,” “food,” “food and beverage services” or “catering”/“catering and canteens,” with or without restaurants as part of the nomenclature, and can include cafeterias, snack bars, pubs, and nightclubs. Together, these two subsectors are sometimes referred to as “hospitality,” “HoReCa,” or “hotel and catering.” Survey participants were asked to provide their approaches for measuring productivity for these two important subsectors, hereafter referred to as HoReCa because it is the most common term in OECD countries.

Survey results from what are arguably some of the most sophisticated countries in terms of statistical measurements indicated that none included quality aspects of inputs and outputs as part of productivity. In fact, there appeared to be a general assumption that the unit labor cost reflected both its quality and cost, and that LP was sufficient for the purpose of tracking productivity.

Input into this PFP measure posed numerous challenges: hours worked is a fairly common measure across the respondent countries as this captured the important part-time employment in this sector. However, as mentioned before, it captures neither the large number of self-employed or unpaid workers that operate many of the smaller businesses nor does it capture hours worked by salaried staff as their hours are not tracked. Some countries, such as the Czech Republic and Greece, use the number of employees as the input, which has similar problems to hours worked, although it captures

salaried employees. Austria uses full-time equivalents derived from the employment module of its TSA instead of actual employee numbers.

Another input measure used by some countries is labor cost. Eurostat harmonizes this information every four years, including for the HoReCa sector. The 2010 survey hourly labor cost results show significant variations between countries, ranging from €3.10 in Bulgaria to €22.51 in Denmark, with an EU27 average of €12.19 and an EU15 average of €14.45. The Greek Ministry of Tourism believes that the quality and cost of labor and its productivity determine the unit cost of labor. However, that does not seem to be a very satisfactory explanation for these great variations and does not take other macroeconomic factors into account such as purchasing power and availability of job opportunities, to name but two. The Ministry also felt that the predominance of micro, small and medium-sized businesses that function with a labor force consisting of family members, immigrants, young people and women, that are employed with nonstandard and flexible forms of employment (undeclared work, temporary and seasonal work), had an impact on both the unit cost of labor and the overall productivity of the sector.

What is considered as output similarly varies across countries. Most commonly used is GDP, but considering the difficulties in isolating the portion of income derived from touristic activity, whether by domestic and international consumers or government, and the variations in how even the HoReCa sector is defined, it is highly unlikely that there is accuracy in the amount of GDP allocated to the sector or consistency is what is captured by the measure from country to country. Other measures used include arrivals and tourism receipts. These pose their own challenges of accurate capture as frontiers, especially in European Union member countries, can be quite porous and receipts often rely on visitor surveys and recall.

It is clear from the information provided by countries that productivity performance results in the HoReCa sector vary depending on the input and output measures used. This can be highly problematic when attempting to compare productivity results across industries or across countries. Only Canada seems to have undertaken in-depth work to compare the tourism industry with that of other major sectors of the economy. Among other variables, the study (Conference Board of Canada 2009) examined labor productivity levels and rates of change in terms of GDP per employee. Results indicated that the HoReCa industries were among the bottom ten equivalent-sized industry groups of the Canadian economy. Indeed, productivity in the overall tourism sector tended to be lower than in the overall economy at \$41,000 GDP per employee with average wages of \$421 per week (including overtime, 2007 data) compared to \$72,000 and \$771, respectively, for the economy as a whole (Conference Board of Canada 2009). However, these findings on productivity do not appear to hold true for developing countries where tourism has been shown to be the most productive

sector (Todd 2008; Hadad et al. 2012) and more innovative approaches to benchmarking destination performance suggest “that North American and European countries lead the world tourism industry in terms of productivity growth” (Assaf and Dwyer 2013, p. 1233).

## Major Unresolved Issues of Productivity Measurement in Tourism

Using either GDP per hour worked or GDP per employee, most OECD countries have a proxy to compare productivity across sectors. However, while these measures reflect the labor-intensive nature of the HoReCa sector, they do not take the quality of the experience offered into account. Cahuc and Debonneuil (2004) illuminated the importance of measuring this aspect of tourism labor productivity in their study by comparing the productivity of services in France and the United States in general, and for the HoReCa sector specifically. The authors reported that, between 1996 and 2000, the service sector in the United States, driven largely by more substantial service quality improvements, enjoyed a productivity gain that was twice as high as that of France. Furthermore, the authors noted that during this period, employment remained fairly stable in France while production slowed, leading to a decline in productivity.

Service quality is a basic element of competition not only between businesses but also between destinations. Consequently, anything that contributes to the efficient production and effective marketing of quality experiences facilitates productivity improvements in tourism. Reynolds and Biel (2007) proposed a “holistic” productivity metric that combined cost of goods sold and labor cost with operational information such as revenue and profit, and also included variables such as guest and employee satisfaction as well as retention equity, which was defined by Rust, Zeithaml, and Lemon (2000 as cited by Reynolds and Biel 2007, p. 354) as “the strength of the relationship between the consumer and the firm.” Although limited to a single US chain’s casual-theme restaurants, the study highlighted the importance of both employee satisfaction and retention equity as well as their critical interplay.

While the numerous small to medium-sized enterprises that comprise the tourism industry can tailor and personalize their services to the needs of the individual visitor and rapidly adapt to changing market conditions, large organizations can compete more effectively on the basis of price by cutting costs through the provision of standardized products and services. Yet, it is precisely the more costly personalized experiences that give destinations their competitive edge and retention equity, not the less expensive standardized offerings.

Because HoReCa is a labor-intensive sector, labor input measures are critical in its productivity measurement. However, data gaps present major issues for labor measures in this sector. Labor inputs should incorporate working hours

by all persons, including managerial workers, production workers, the self-employed, and unpaid family workers. Currently, most employment surveys provide good measures of the employment and hours of production workers, which are collected on an hour-paid basis. In contrast, while the payrolls are available for managerial workers, records of managers' working hours are scarce. The paucity of data on unpaid family workers, who constitute a significant portion of the workforce in the HoReCa sector, presents further challenges.

There is also no consensus on what constitutes appropriate output. For instance, while many OECD countries use GDP, arrivals, and/or receipts data, Assaf and Josiassen (2012) in their ranking of determinants of tourism performance expand arrivals to include domestic tourists and replace receipts with length of stay for both international and domestic tourists.

## Conclusion

This paper has taken the complex but critically important concept of productivity and expounded its basic characteristics, structure, and features. Although still underresearched, a number of studies exist that attempt to address productivity within one of tourism's subsectors, such as hotels (cf. Barros 2005; Brown and Dev 2000; Marchante and Ortega 2012; Siguaw, Enz, and Namasivayam 2000), restaurants (Koys 2003; NZTRI 2007; Reynolds and Biel 2007), or travel agencies (Barros and Dieke 2007), by isolating a particular influencing factor, such as information communication and technology (cf. Sigala 2003; Sigala et al. 2004; Siguaw, Enz, and Namasivayam 2000), and/or those that are country-specific (cf. Barros 2005; Barros and Dieke 2007; Peypoch and Solonandrasana 2008; Reynolds 2003). While these studies tend to assume that the reader is familiar with economic terminology and calculations, we have attempted to render the concept more accessible to noneconomists.

Approaches used by OECD countries to measure productivity within the HoReCa sector have been reported and inconsistencies in what constitutes appropriate input and output measures have been highlighted. In addition, some of the significant obstacles to establishing a common measure that captures the critically important quality aspects of both input and output and the cocreated value, and that would therefore facilitate consistent measurement of the sector's productivity against other industries and other countries, have also been discussed.

Various explanations for the perception of low productivity and slow productivity growth in the service sector exist. However, unsatisfactory service productivity definitions and productivity measurement errors in the service sector are largely responsible. But Sigala et al. (2004) also found that it is not enough to adopt technologies, specifically in hotels, but they must be "exploited to informationalize and

rationalize process and products/services" (p. 189) to have their full impact on productivity. The lack of accuracy of the measurement complicates the management and monitoring of productivity. Therefore, a first step to addressing these shortcomings is to enhance the quality of the available data. Numerous countries have developed or are in the process of setting up a TSA that can provide them with more reliable data on the economic contributions of the various subcomponents of this industry and, while presenting its own challenges (Frechtling 2010), at least provides a certain longitudinal consistency. Furthermore, a number of economists have started to use TSAs as they "provide an internationally recognized and standardized method of assessing the scale and impact of tourism related production and its links across different sectors. TSA can provide a comprehensive database which identifies tourism's role in an economy and provides a rigorous and reliable basis for drawing comparisons between tourism and other sectors in terms of their contribution to the economy, as well as international comparisons" (Dwyer and Spurr 2010, p. 2; Dwyer, Forsyth, and Spurr 2007).

The next step, which few countries have taken despite its urgency, requires the addition of a human resource module to the TSA (OECD 2000). Such action would enable countries to develop a stronger sense of the composition of the labor force, track changes over time, and determine the effectiveness of policy initiatives and programs. Although the link between labor productivity, service quality enhancement, and employee education and training has been clearly demonstrated by many authors and organizations (cf. among others Baum 2007; Beaudry and Green 2000; Keller and Bieger 2007; Oxford Research 2008), there is great reluctance by employers to invest in—and value—the education and training of their workforce (Joppe 2011).

Because of the overwhelming number of micro and small businesses in the HoReCa sector, productivity improvements will always remain more limited than in sectors dominated by a few large employers with significant capital and technology investments that reduce reliance on people. It must also be recognized that many of the HoReCa business owners have chosen the sector for its lifestyle and will therefore be reluctant to achieve the levels of critical mass needed to make investments in capital and technology financially worthwhile. Part of this lifestyle tends to be a high touch interaction with clientele and the ability to customize experiences that would be lost with expansion and/or greater reliance on technology.

Just as important, however, is the need for the statistical agencies in each country to refine national productivity measures for the service sector as a whole. Countries should agree on a series of metrics to measure the quality of both the input and output, in addition to the traditional metric of labor productivity, for instance, by tracking capital investment, technology investments, and educational attainment.

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