

**LINKING FIRMS CONDUCT AND PERFORMANCE IN A GLOBALISED
MARKET: THE MEDIATING ROLE OF INNOVATION**

Di Foggia, Giacomo 

Department of Business Administration, Finance, Business and Law

University of Milano-Bicocca, Milan, Italy

giacomo.difoggia@unimib.it

Lazzarotti, Valentina

School of Industrial Engineering, LIUC Università Cattaneo, Castellanza, Italy

vlazzarotti@liuc.it

Abstract

Based on an international survey of 674 travel services related firms based in Italy, France, UK, Germany and Spain, this paper analyses the effects of business orientation, marketing and communication skills, ICT and HR on performance. This study is based on a mixed methods research relying on both theoretical assumptions and statistical techniques and methodologies, precisely Structural Equation Modelling (SEM). Results show that new service development (NSD) and innovation oriented firms take advantage from the competitive market dynamics by searching, developing and transforming new ideas into business, launching new or updating existing services, thus enhancing their offer. The models discussed constitute the novelty of this research as most prior empirical research investigating mechanisms through which some factors affect firm performance diverges in terms of methodology, population and purpose.

Keywords: NSD, innovation, economics, globalisation, competitiveness

INTRODUCTION

Economic systems are increasingly characterised by changes in markets and consumer preferences, in drivers for competitiveness, in technology and in the organisation of factors of production. As a result, the products and services are constantly being modified. These changes follow complex patterns of innovation. Based on an international survey of 674 firms in Italy, France, UK, Germany and Spain, this paper evaluates the mediating role of innovation on performance. This is done by focusing on internal factors, i.e. information and communication technology (ICT), market and revenue management orientation, marketing and communication

predisposition, human resources. This is done using constructs be varied in the models: RM, MKTG, ICT, HR, NSD and PER. It is widely recognised that innovation activities drive competitiveness of firms (Chesbrough, 2010) and of territories (Porter and Ketels, 2003). Among the vast field of innovation studies, attention on new service development (NSD) has rapidly increased. In today's rapidly evolving and dynamic economy, service development and innovation has become a vehicle to comply with volatility of demand and stay competitive; today, good ideas must be put in practice quickly. A remarkable corpus of literature suggests innovation-related issues to succeed in such a complex environment (De Jong and Vermeulen, 2003; Dwyer and Edwards, 2009; Ottenbacher and Harrington, 2010). Since no suitable data were available to conduct the analyses, we made use of a deep literature review to design and fine-tune a web-based survey. The questionnaire was deployed following strict steps. Since questions can be raised in a multitude of ways and the data gathered in many ways too, specific types of questions are suitable for specific purposes and dissimilar types of data can be differently interpreted (Brace, 2004). This study is based on a mixed methods research (MMR), consequently, it relies on both theoretical assumptions as well as statistical techniques and methodologies. Provided the nature of this study, the joint employment of quantitative and qualitative methods can guarantee a deeper understanding of the phenomena. The main statistical tool is known as structural equation modelling (SEM). Precisely, the SEM models are deployed and tested in this order: the measurement components come first, the path components follow while the full SEM models conclude the paper. The analysis provides new insights and strengthens the existing literature. Considering the measure RM results show the share of direct and indirect impact. Specifically, the total standardised impact of RM equals 0.65 ($p < 0.001$) and the direct effect is 0.38 ($p < 0.001$). It can be therefore speculated that 58.5% of RM effect on performance is direct, while 41.5% is indirect; after controlling for pro-innovation attitude respectively. Taking into account the data resuming the standardised effect of MKTG, one can see that the total impact equals 0.69 ($p < 0.001$). Being the direct effect 0.48 ($p < 0.001$), 69.5% is direct after controlling for the attitude to innovate, while 30.5% results to be indirect. Instead, considering the standardised effect of the measure HR on the performance, the total impact equals 0.53 ($p < 0.001$), provided that the direct effect is 0.28 ($p < 0.001$) 52.8% of HR effect is direct, while 47.2% results to be indirect - after controlling for the innovation propensity. Taking into account the total impact of ICT on performance it equals 0.66 ($p < 0.001$). Provided that the direct effect is 0.42 ($p < 0.001$), about 66.6% of ICT effect on performance results to be direct after controlling for the propensity to innovate and develop new services, the remaining 33.4% corresponds to indirect effect. The models discussed constitute the novelty of this research as most prior empirical research investigating mechanisms through which some factors affect firm performance largely diverges in terms of methodology, population and

purpose. The remainder of this paper is organised as follows: in the introduction an overview of the problem is provided, this is done by introducing major forces that, although not investigated in the proceeding of the study, concur to undermine the sector development. After that, the literature is analysed and the theoretical framework defined. Models, Results and conclusions; follow.

LITERATURE REVIEW

Many technical, economic and social and aspects influence the innovation capability as well as dynamics of different territories (European Commission, 2014). As a territory one can mean the set of tangible and intangible values, such as population, culture, historical legacy, heritage and urban art, infrastructure, location and any other instrumental ingredient to increase the overall value of individual elements (Kotler, Haider, and Rein, 1993). Supporting the development of a territory from the bottom is an essential approach to promote development opportunities and collect instances expressed in terms of individual and collective standpoint from backlog and turn them into feasible and fundable strategic projects. This concept finds its strength in the system of relationships, alliances and partnerships, political and socio-economic support and investment with timely and proactive culture with the development of lines of action (Di Foggia and Lazzarotti, 2013). Economic impact of travelling on territories has been widely investigated by scholars. Firms must create the right conditions and get the right information from the market. An emerging field of study is the revenue management. Revenue management is a young and multidisciplinary issue considering that the idea, even if limited to the implementation of revenue management systems in maximizing yields, dates back to the eighties (Kimes, 1989). Since then, a remarkable amount of manuscripts have been published (Chiang and Chen 2007, Ivanov and Zhechev, 2012). According to Hayes and Miller (2011), RM must understand the complex interactions that influence clients' behaviour and become better on taking decisions. However, today's level and quality of information require decision makers to relay on decision-supporting tools (Anderson *et al.*, 2012). In their study, Padhi and Aggarwal (2011) declare that with the term RM one can refer to the policy employed by many industries to handle the allocation of their competence to take full advantage of revenue. As highlighted by Hayes and Miller (2011), the concept of revenue management denotes the individual or team responsibility in ensuring that a company's prices match the customers' willingness to pay, see Legohérel, Poutier, and Fyall (2013) for a comprehensive overview of RM in practice. A good starting point to match the customers' willingness to pay is a genuine relation with clients. A number of authors have suggested a move towards combining revenue management (RM) and CRM. Wang (2012) analyses the synergy between CRM and RM and discusses the potential management conflicts. According to Rouse *et al.* (2010), RM aims to pick up an organisation's

performance, profitability and cash flows. Revenue management exploits differences in purchasing behaviours by diverse market segments. As a matter of fact, pricing and capacity allocation in various market portions are strategic (Mauri, 2012). These topics are constantly evolving with progress of information and communications technologies. In a recent paper, Dwyer and Edwards (2009) give emphasis to the changes of the business environment and the challenges they generate for management. Skugge (2011) underscores the importance of the demand function as it shows the relationship between price and demand, more than ever in recession times demand tends to decrease and prices as well. As a consequence, one may suppose that RM can be analysed from different perspectives and fits in many industries from services to manufacturing. Let us turn our attention to travel related services where a great number of contributors shed light on specific aspects: Weatherford and Kimes (2001) in forecasting for hotel yield management, Gorin and Belobaba (2004) examine the role of RM on classic measures of airline performance, Harewood (2006) on managing of hotel's inventories using variables prices, Luo and Peng (2007) developing a continuous time dynamic pricing model for airlines, Lindenmeier and Tscheulin (2008) on the influence of seat inventory control, Noone and Mattila (2009) in the field of hotel revenue management and the web, specifically on customers' willingness to reserve, Guadix *et al.*, (2010) with a focus on technology in hospitality. The evidences from several studies suggest variety of factors related to RM which form an ideal breeding ground for proper implementation (Sanchez and Satir, 2005; Phillips, 2005; Wang and Bowie, 2009). According to the mentioned studies, principal factors are tied to: allocation in terms of fixed quantity of perishable capacity available to the supplier, time as the transaction does not occur simultaneously, in fact booking happens prior to use, and offer price management to the supplier who has the ability to handle sales according to different demand or price strategy and real time in the sense that supplier can swiftly modify price levels. Also, it is worth noting that the concept of revenue management originated and was limited to large modern structured corporations. Its implementation has gradually spread from large companies to small businesses (Talluri and Van Ryzing, 2005).

It is also interesting to examine the order in which certain activities need to take place within the RM process. Considering the process of revenue management main activities, in the work of Emeksiz *et al.*, (2006) a five steps process is presented, while Tranter *et al.*, (2008) identify eight steps, Ivanov and Zhechev (2012) adopt a seven stages hotel revenue management process, namely: goals, information, analysis, forecasting, decision, implementation and monitoring. Sundbo *et al.*, (2007) focus on the predisposition to innovate of hospitality businesses. Jacob *et al.* (2003) claim that managers of tourism tend to adopt organisational instead on technological innovations. Other researchers have investigated success elements (Ottenbacher, 2006). In this paper we consider the concept of new service

development (NSD) as a proxy of innovation propensity as a mediator factor able to strength or mitigate the role of the analysed factors. Although service development studies stem from those related to the development of products, NSD has recently emerged as a independent topic. No wonder that some authors agree on the fact that NSD and NPD may, not marginally, differ (Dolfsma, 2004). It is difficult to figure out products without an associated service and in the mean time if we take into consideration a service (as meant in this work) there is no doubt that services require products too. We agree with Vargo and Lusch (2004) which underscore their complementarity. On the other hand one must note that services have characteristics that products typically don't have (inseparability, heterogeneity and perishability) as Jaw, Lo, and Lin (2010) suggest. Focusing on the role of personnel, Shekar (2007) notes that there is a higher HR involvement in the service delivery, at least in high and medium contact services. A focus on NSD is fundable in Di Foggia and Lazzarotti (2013); the authors state. Service development is a wide concept (Alam and Perry 2002; Jaw, Lo, and Lin 2010; Tsai, Verma, and Schmidt 2008) and some problems may arise in using NPD frameworks. Presently, managerial literature describes the development process from different perspectives and for different aims, there is a wide range of literature that demonstrate the interest from diverse perspectives (de Brentani and Cooper, 1992; Avlonitis, Papastathopoulou, and Gounaris, 2001; Bullinger, Fähnrich, and Meiren, 2003; Smith, Fishbacher, and Wilson, 2007; Junarsin 2010; Ernst 2002)". Also it is important to underscore that results on the innovativeness of tourism industry lead to different figures; some authors find differences among tourism and other industry (Evangelista, 2000; Christensen, 2008; Miles, 2008), while Hall (2009) speculates the similarity of tourism and other analysed sectors. Regarding the characteristics of the firms, a very interesting study of Sundbo et al., (2007) shed light on the some enabling factors. They find that the higher the number of employees the higher the share of investments in innovation, the same authors go into detail of HR skills and demonstrate a positive correlation with education and Innovation. Jacob *et al.* (2003) argue that tourism's firms use to adopt principally organisational and managerial innovation, i.e. mainly non related to technological aspects. Other scholars have deeply analysed innovation and factors that, according to their results, lead to success in tourism (Hjalager, 2010; Ottenbacher, 2007). However, there are critical issues too; supported by our findings, we highlight the underestimation of technological opportunity, insufficient or ineffective allocation of available resources, poor understanding of clients requests, underestimation of the strength of main competitors' brand, overestimation of demand. The initial part of the life cycle is the most critical and is also one in which the risk of failure is higher. To this can be divided into several sub-processes. Finally, an exhaustive categorisation of innovation in tourism is provided by Hjalager (2010), the author reviews the literature on innovation in tourism and proposes a taxonomy according to the purpose, the scope and the level of innovations.

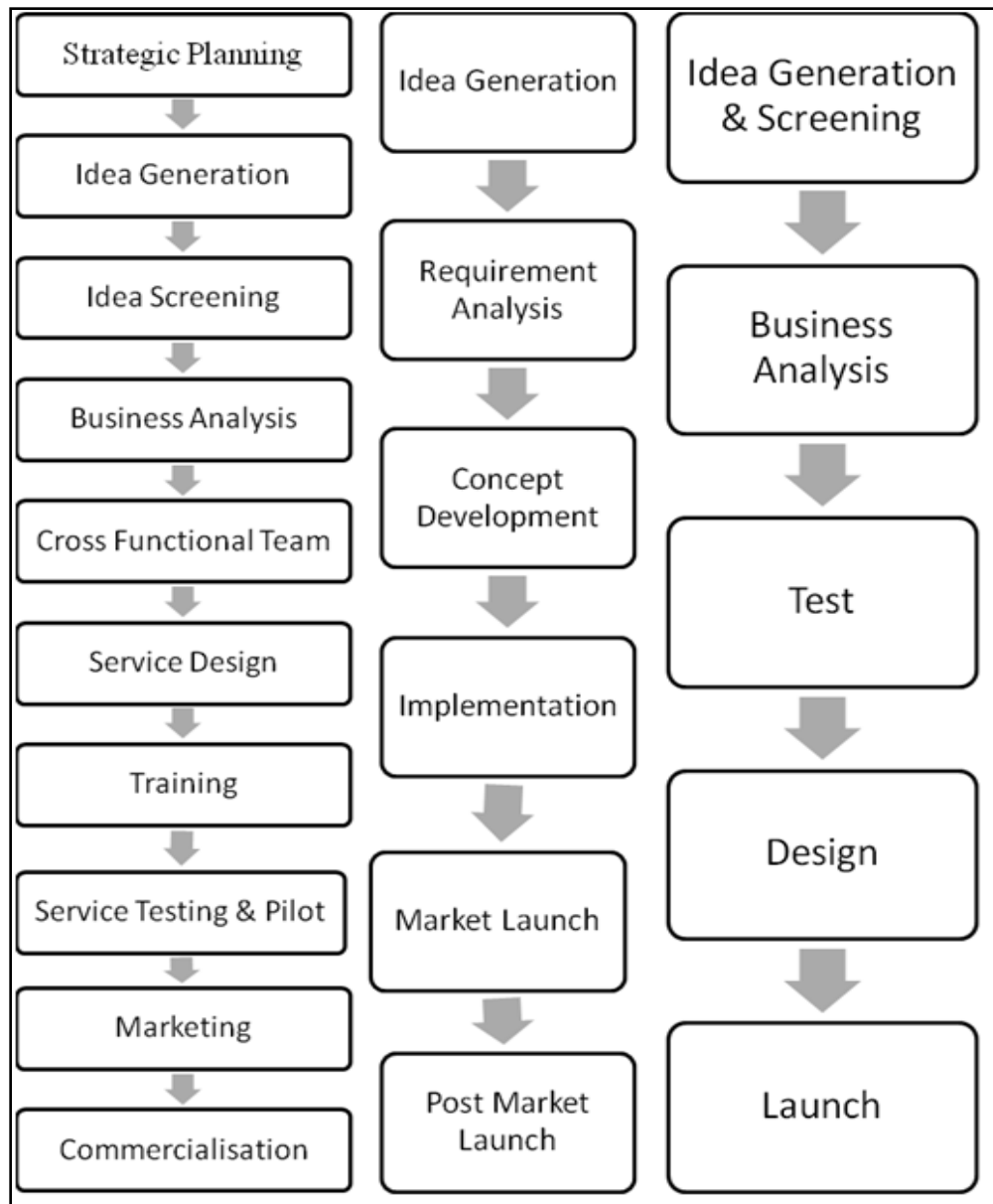
As a tool for this study we inspired to a linear or waterfall service development model to represent a proxy of innovation attitude. According to Bullinger (2003), these frameworks are featured by a sequence of process phases, every phase embeds a set of activities and routines both internal and external to the firm. Each evolution from one phase to the following relies on the achievement of the previous one, that's to say day a strong linkage between all the phases is a requirement. Furthermore, each point is based on the others, in other words, the result of previous phases provide the input for the following ones, thus, the successful of each step facilitates the good implementation of the other.

Figure 1 compares three (out of a large amount of available models in literature) waterfall representations. The models – A, B and C – segment the development process into clear sections, the degree of detail changes. Moreover, they perfectly comply with the result-based setting up as stated above, in fact the arrows show that the after each stage, another starts. These models have, naturally, drawbacks too, specially their rigidity, because the implementation process, follow a given path that often scarify customisation or non standard procedures. Nevertheless thanks to their relative simplicity (if compared with other typology like spiral models or prototype models), there is no doubt that are the most used models among both scholars and professionals, since the Booz and Allen' s NPD model introduction. Most of the known service development models fall into this typology.

Figure 1 present a synthesis of three linear of models, the first one “A” is provided by Alam and Perry (2012), the second “B” by Bullinger (2003) and the third one by the authors of this study, but it is based on several studies (Alam and Perry, 2002; Hsiao and Yang, 2010; Karniouchina, Victorino, and Verma, 2006; Loch and Kavadias, 2008; Lonial, Tarim, Tatoglu, Zaim, and Zaim, 2008; Papastathopoulou and Hultink, 2012; Syson and Perks, 2004). Looking at

Figure 1 one can see that although characterised by a sequence of steps, model A appears to be more complex than model B which in turn is slightly longer than mode C used in this study. Our choice to employ the model with the minor number of phases is championed by the fact that there are no sound studies to rely on if we consider tourism and hospitality in particular. Furthermore this sector is often depicted to be pretty low innovative if compared with others (Sundbo, Orfila-sintes, and Sørensen, 2007). In addition our study investigates the behaviour of SMEs preventing us to get insight from large companies and seize is positively correlated to innovation activities.

Figure 1: NSD Framework



Source: Bullinger *et al.*,(2003), own elaboration and Alam and Perry (2002).

Figure 1 resumes the concept of new service development and can be used as a proxy to measure the propensity of firms to innovate. It is well known, however, that some barriers which threaten the deployment of innovation activities exist. Using a composite indicator related to innovation activities, the European Commission yearly assesses the innovation performance of Member States (European Commission, 2014). In the report, the EU countries are divided into

four groups: leading countries (among which there are Finland and Germany), countries that perform well on average (among them Austria and France), countries defined *moderate innovators* (for example Italy together with some Eastern European counties), and low innovation countries (e.g. Bulgaria, Romania and Latvia). The differences in terms of innovation performance between the states are still considerable. The cited analysis (2004-2010) indicates that the innovation performance has improved in the majority of European regions (precisely in 155 out of 190). The report provides a general overview of the factors that politicians and professionals shall consider to steer the development of innovation activities, remain competitive and avoid to become followers see Dwyer and Edwards (2009). As shown in Table 1 manufacturing firms have introduced more innovations if compared with those o belongings to services.

Table 1: Innovation in Manufacturing and services

	Innovative firms	Only Service/Product innovation	Only process innovation	Service/Product and process
Manufacturing	43,1%	24,5%	25,2%	50,2%
Services	24,5%	31,5%	23,6%	45%

Source: own elaboration based on ISTAT (2013)

RESEARCH METHODOLOGY

This study is based on a mixed methods research (MMR), therefore, relying on theoretical assumptions as well as statistical techniques and methodologies. Since no suitable data were available to conduct the analyses, we made use of a deep literature review to design and fine-tune the questionnaire in an effort to gain reliable information. The questionnaire is comprehensive, in fact it comprehends both (i) open questions (especially in the last section), these kinds of questions are spontaneous since the respondents were left free to answer with their own words without any words limit and (ii) closed questions. We investigate (i) the direct impact of a reduced set of latent exogenous variables on the performance, (ii) the effect of innovation on performance and (iii) the total effect given the mediation of innovation. Supported by an extensive literature review our latent variables are the following: LV1: the ability of firms to analyse the market and its own performance (RM), LV2: their marketing and communication orientation (MKTG), LV3: the quality and trust in human resources (HR), LV4: competence and usage of ICT, LV5: the. The endogenous variables are a proxy of NSD "NSD" and performance (PER).

Research questions

- Do the mentioned factors influence on NSD propensity?

- Do the mentioned factors directly influence the performance?
- Is the impact of the mentioned factors strengthened by the mediation of NSD?

Research hypotheses

First hypothesis: H_0 a positive significant relationship between LVs and Performance exists, H_1 otherwise. Second hypothesis: H_0 there is a positive relationship between LVs and the capability to innovate “NSD”, H_1 otherwise. Third hypothesis: H_0 the impact of LVS on the declared performance is strengthened by the mediating role of service innovation “NSD”, H_1 otherwise.

Population and variables

As previously cited, the analysis is based on an international survey of 674 firms (total sample 7000, response rate 9.6%) located in Italy, France, UK, Germany and Spain using a web-based data acquisition approach. The firms are segmented by NACE REV. 2 codes and diverse analyses are applied to model the data.

Table 2: Count and percent of firms

Country	Count	Percent (Total)
France	76	11.3%
Germany	42	6.2%
Spain	92	13.6%
UK	111	16.5%
Italy	353	52.4%

Source: own elaboration

The sample selection process followed the following steps: (i) geographical location: this study is aimed at focusing on Italian firms providing insights from an international comparison, thus, the questionnaire was sent to firms located in: Germany, UK, Spain and France. (ii) Methodology and source; a database of comparable financial information of European companies – *Amadeus, Bureau van Dijk*, aim: equal probability selection method. Total sample 7000 companies. (iii) Countries: France, Germany, Italy, Spain, United Kingdom. Number of employees: min 10, max 249. (iv) industries: NACE Rev. 2 (Primary codes only): 501 - Sea and coastal passenger water transport, 503 - Inland passenger water transport, 511 - Passenger air transport, 551 - Hotels and similar accommodation, 561 - Restaurants and mobile food service activities, 563 - Beverage serving activities, 791 - Travel agency and tour operator activities (Status: Active). (v) *Informed consensus*: all the respondents received an email containing all

the information they would have required to guarantee the privacy. We were compliant with European law on personal data that can only be assembled with permission and under severe conditions, in this case for a scientific purpose. All the information were processed and analysed by the authors, respondents will receive a report containing aggregate information and no business names or any other element that could lead to the respondent. Most of the variables were built from items (or observed variables) classified as Likert-type, collected on an ordinal basis (from 1 to 7). Even if there are impending problems in using SEM with ordinal values: e.g. the estimation method that is ML by default, there are examples of first-class analyses with Likert scale items. As shown, all the variables were selected after a rigorous analysis of literature.

The latent variables, or factors, were generated by combining items as follows: (NSD) is composed using the following items: [nsd1] idea generation and brainstorming sessions (Zomerdijs and Voss, 2011; Jin et al., 2012; Hansen and Birkinshaw, 2007); [nsd2] systematic collection and evaluation of new ideas (Popadiuk, and Choo, 2006; Di Gangi and Wasko, 2009; Moulart and Hamdouch, 2006); [nsd3] differentiation of service from competitors' offer (Horn and Salvendy, 2006; Tomat, 2006); [nsd4] trade-off analysis of different projects - benefits and disadvantages. (Alegre, Lapiedra and Chiva, 2006; Kerzner, 2013); [nsd5] cost and revenue forecasting analysis (Hansson, 2007; Barros, 2005; Weatherford and Kimes, 2003); [nsd6] early analysis of price placement - hypothesis on best prize. (Varini et al., 2003; Brons et al., 2002); [nsd7] precise definition of service characteristics (Candi, 2010; Hsiao and Yang, 2010; Ottenbacher, Gnoth, and Jones, 2006); [nsd8] client consultation, e.g. feed-back. (Chiu and Tomimatsu, 2013; Alam and Perry, 2002; Carbonell, Rodriguez-Escudero, and Pujari, 2009); [nsd9] service customisation possibility (Jiao, Ma and Tseng, 2003; Sundbo, 2002; Gwinner et al., 2005); [nsd10] measurement of effectiveness through internal trial (Meuter et al., 2005; Okumus, 2004; Akbaba, 2006).

(ICT) embeds the following items: [i1] investment in management information system (Leidner, and Kayworth, 2006; Piccoli and Ives, 2005); [i2] investment in the quality of our website (Lee, and Kozar, 2006; Bai, Law and Wen, 2008; Gregg and Walczak, 2010); [i3] implementation our e-commerce website (Ngai and Gunasekaran, 2007; Teo, and Liu, 2007; Lowry et al., 2008); [i4] attendance to ICT training sessions (Stamboulis and Skayannis, 2003) Sirirak and Islam, 2011).

HR: [hr1] trust in staff and delegating market research (Hair, Bush and Ortinau, 2006; Javalgi, Martin and Young, 2006); [hr2] cooperation with public authorities and local administration (Bloomfield, 2006; Hodge and Greve, 2007); [hr3] being part of a network or business consortium (Heck and Vervest, 2007; Jansen, Brinkkemper, and Finkelstein, 2009); [hr4] provision of training and development system to the staff (Aguinis and Kraiger, 2009);

Chand and Katou, 2007); [hr5] conduction of job satisfaction survey (Sy, Tram and O'hara, 2006; Silva, 2006; Yang, 2010).

Performance (PER): [per1] enhancement of the portfolio of services (new services); [per2] quality of existing services; [per3] production or delivery process for our services; [per4] response time to satisfy client's needs; [per5] market share; [per6] reduction of financial risks of developing new ideas; [per7] stimulation of new ideas; [per8] positive client's feedback; [per9] general skills and competencies; [per10] online reputation and presence; [per11] market knowledge.

Revenue management (RM): [r1] financial indicators of costs and revenue (Pavlatos and Paggios, 2009; Sainaghi, 2011); [r2] effectiveness indicators (Toh, Raven and DeKay, 2011; Forgacs, 2010); [r3] client behaviour and preference analysis (del Bosque and Martín, 2008; Del Chiappa, 2011); [r4] historical data on business performance (Guadix, Cortés, Onieva and Muñuzuri, 2010; Noone and Mattila, 2009); [r5] seasonality of sales, peaks and falls of demand (Currie and Rowley, 2010; Andrawis, Atiya and El-Shishiny, 2011); [r6] classification of client's needs (Craggs and Schofield 2009; Rondan-Cataluña and Rosa-Diaz, 2012; [r7] price policies for sales optimisation (Edelman, Jaffe and Kominers, 2011; Badinelli, 2000).

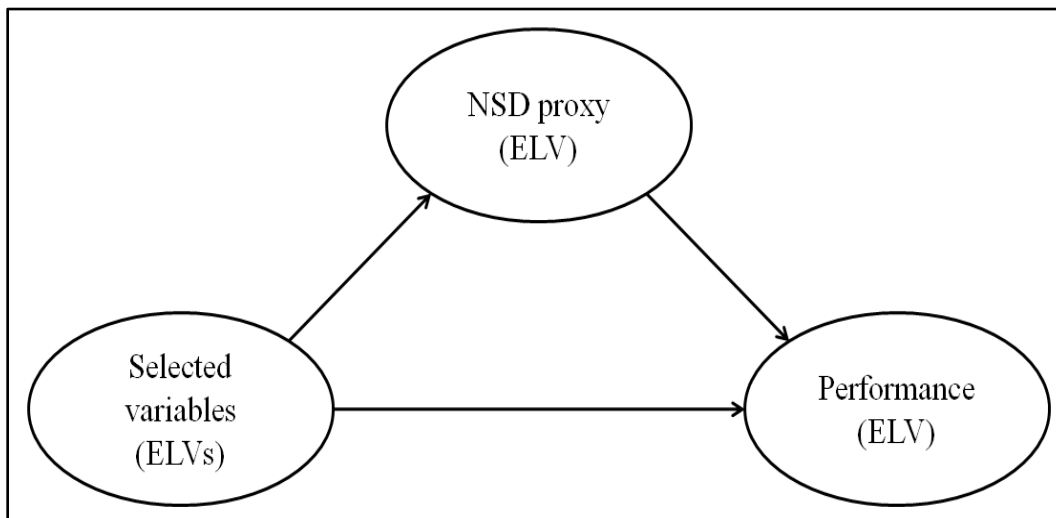
Marketing and communication (MKTG). [m1] customer relation management (Stockdale, 2007; Vogt, 2011); [m2] outguess new trends in order to take advantage from them; [m3] new technology for the implementation of company procedures; [m4] online brand reputation enhancement (Ye, Law and Gu, 2009; Schmidt, Cantalops and dos Santos, 2008); [m5] specialised conference and meeting participation (Choi and Dickson, 2009; Baum and Devine, 2007); [m6] online complaint and suggestion management (Daghfous and Barkhi, 2009; sparks and Browning, 2010);[m7] SWOT analysis (Ping-qing, 2007; Jafari, 2013).

Framework

Figure 2 indicates how selected latent variables (ELVs) affect the expressed performance with and without the mediating role of innovation propensity, i.e. NSD proxy. The same figure also sheds light on the impact of the mentioned selected variables on innovation propensity, even if not the main research focus – indeed, the philosophy of the research is that of guaranteeing a casualty effect on performance (endogenous latent variable in the SEM model). The most common use of SEM is that of model generation in which no initial model is assumed, different models are then tested with the same data. The goal of this process is to deploy a model with the following characteristics: compliance with theory, parsimony, fitting the data.

A second approach concerns the testing of alternative models, and it applies to situations where more than one a “initial” model is exists. In this case the best model in terms of correspondence to the theory or to the data may be selected, while the alternatives rejected. We a priori assume which variables (and the directions) affect others according to the hypotheses. Accordingly, SEM is used as a confirmatory tool.

Figure 2: Framework of research hypotheses



SEM is a viable statistical tool to model data according to the framework. A good starting point is the work of Nunkoo, Ramkissoon, and Gursoy (2013) in view of the fact that the authors review the use of SEM in more than two hundreds articles published in noteworthy journals. SEM allows the studying of complex events and provides a set of tools – e.g. the combination of statistical techniques – to help researchers in linking theoretical and empirical analysis and practice as Bagozzi and Yi (2012) state; the authors also provide guidelines on specification, appraisal, and explanation of models. SEM (STATA 12 was used in this paper) is aimed at assessing relationships among latent and measured variables (latent variables can exist at more levels, e.g. in higher order models), and this is very important since the interest on interaction effects between measured and latent variables has dramatically increased (Henseler and Chin, 2010). SEM represents a key method in testing hypotheses on the effect of latent variables on measured one and vice versa (Hair, Sarstedt, Ringle, and Mena 2012) and has become more and more accepted among scholars of social and managerial sciences. This is the reason why, according to Heene, Hilbert, Draxler, and Ziegler (2011), it is thought to be one of most used methodology for validating complex constructs. SEM has also gained popularity in

T and T research (Nunkoo, Ramkissoon, and Gursoy 2012). However, SEM must be used accurately. Even if, as already mentioned widely employed, SEM models (or better their misemployment) have been criticised. A great deal of scepticism has emerged with respect to reporting of (i) indices of goodness of fit (Nye and Drasgow 2011; Heene et al. 2011), (ii) issues related to the sample size – generally speaking SEM needs a certain number of observations, 200 would be a satisfactory sample, (iii) multivariate normality, and estimation methods (Zhong and Yuan 2011) to this extent, some problem may arise with ordinal or Likert-type items.

The models

Before presenting the full models, we test the linkage between the selected factors in an effort to discover if the four exogenous latent variable share a common feature. This is done by applying a higher-order CFA model that is meant to characterise hypotheses about relations (with a hierarchical order) among constructs. This is possible with the specification of what are called, see Acock (2013) “*higher-order factors*”, that are viable if a causal effect from the higher to the lowers exists .

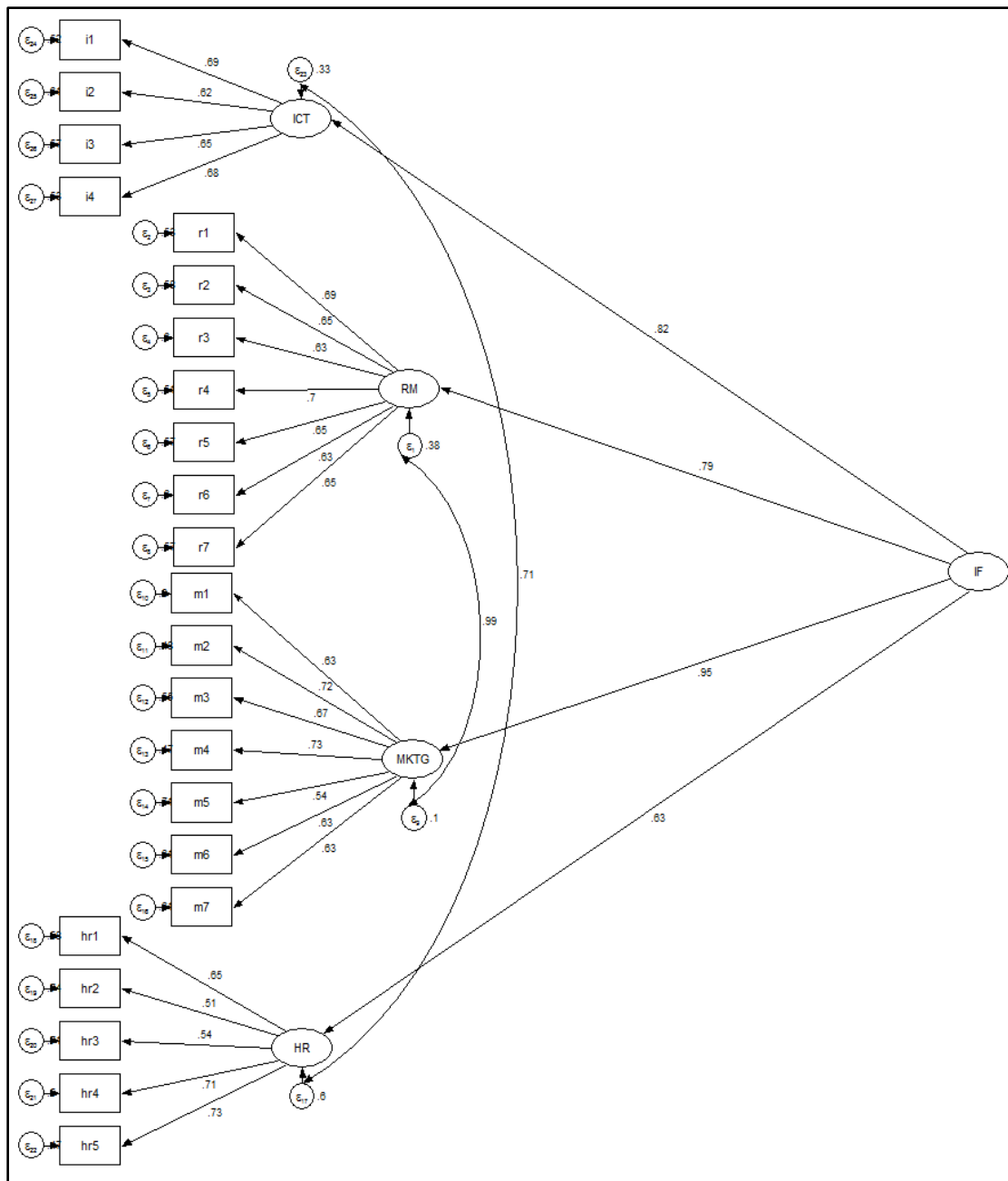
Figure 3 represents the case of internal factors.

The model illustrates the hypotheses that RM, MKTG, ICT and HR are measured by the respective items (see the chapter on measurement component); and each first-order factors has, in turn, a direct cause (and an error). The cause is IF (that is the higher-order factor), and represents a proxy of internal factors, with no indicators. Since second-order factors are indirectly measured, the other presumed direct cause of each first-order factor is an error. Thus, the error and IF are exogenous, while the first-order factors are endogenous. To identify these kinds of models, three or more first-order factors are required. If not, the direct effect (higher-order factor on the lower-order factors) may result under-identified. Moreover, each first-order factor should have at least two indicators. Provided the goodness of fit as shown in table 3 as well as the coefficients reported in the figure 3, we can speculate the there is a higher order factor, the four variables have in common. The effects are noteworthy, ranging from 0.62 ($p < 0.01$) of the internal factors on HR to 0.82 ($p < 0.05$) on ICT.

Table 3: Goodness of fit of the measurement component (CFA)

Model	RMSEA	CFI	SMRM	Cronbach's alfa
RM	0.055	0.981	0.025	0.841
MKTG	0.075	0.963	0.031	0.834
NSD	0.072	0.957	0.033	0.893
HR	0.059	0.984	0.024	0.758
ICT	0.076	0.988	0.018	0.760
PER	0.056	0.967	0.030	0.881

Figure 3: Internal factors (High-order CFA)



Goodness of fit. χ^2 : 1046.66, RMSEA: 0.074, CFI: 0.871, SRMR: 0.058

The number of iterations to achieve minimization and the degree of freedom of the measurement components are the following: HR: number of iterations:2, degrees of freedom: 15. ICT: number of iterations:2, degrees of freedom: 12. MKTG: number of iterations:3, degrees of freedom 21. RM: number of iterations:2, degrees of freedom: 21. NSD: number of iterations:3, degrees of freedom 30. PER: number of iterations: 3, degrees of freedom: 33.

Figure 4: The mediator factor: NSD

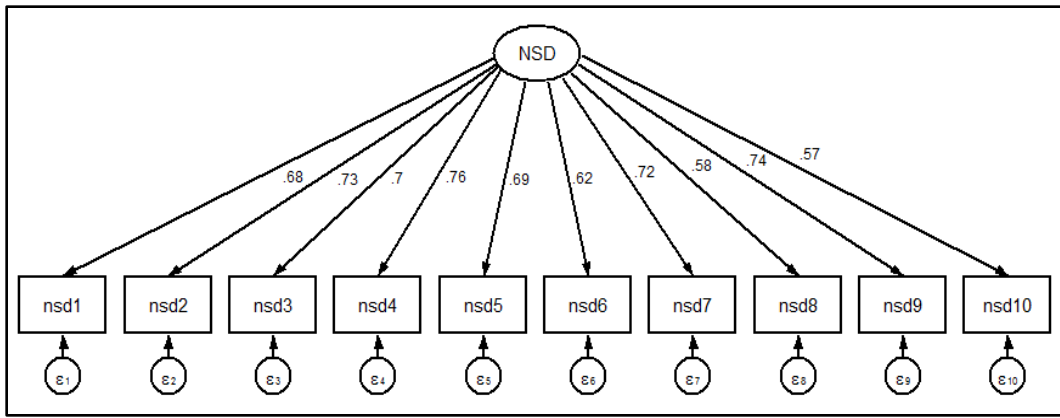


Figure 5: The performance (PER)

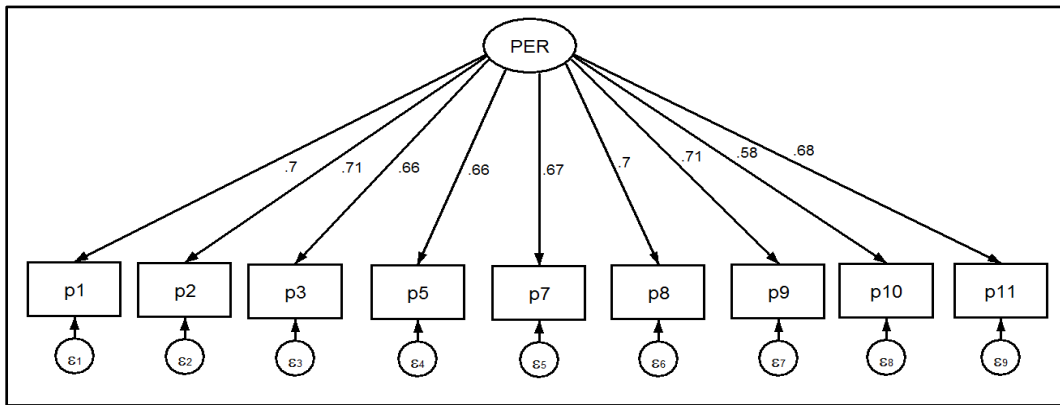
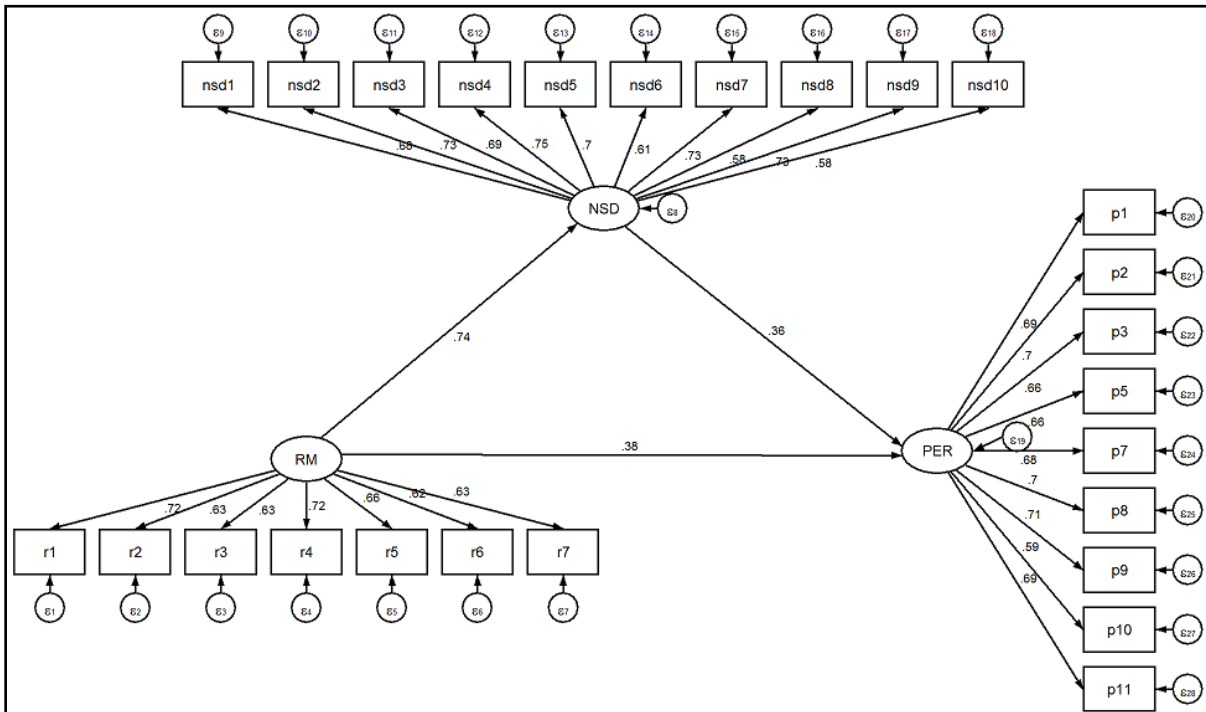
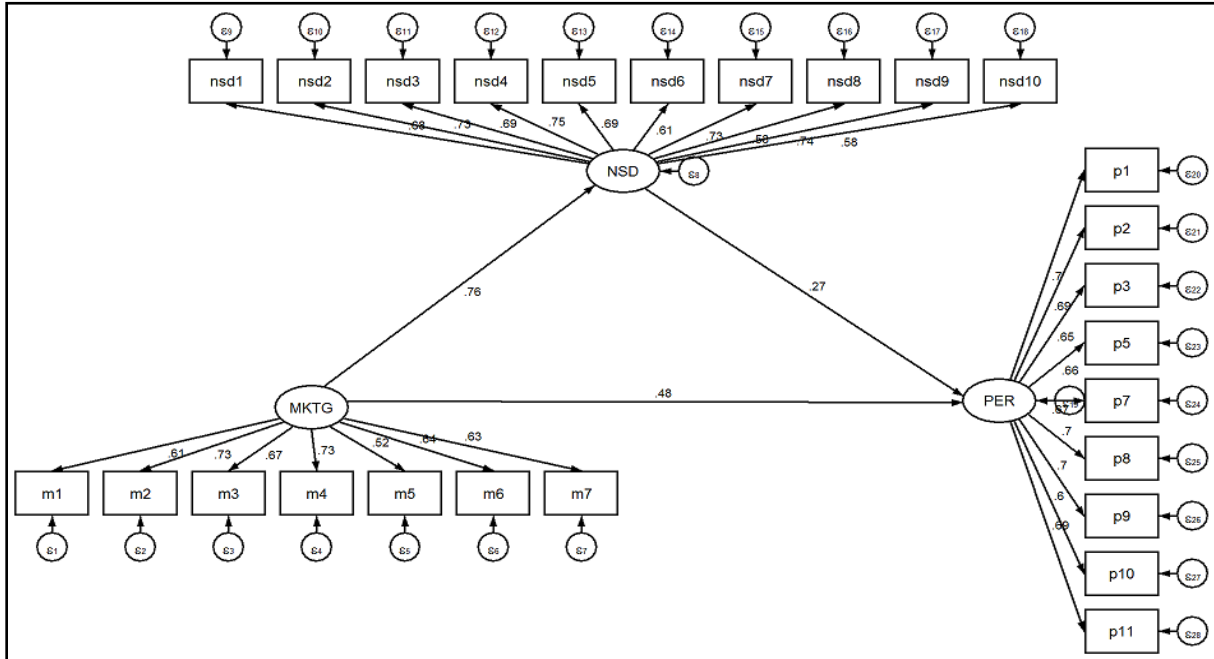


Figure 6: Model (1): RM-NSD-PER



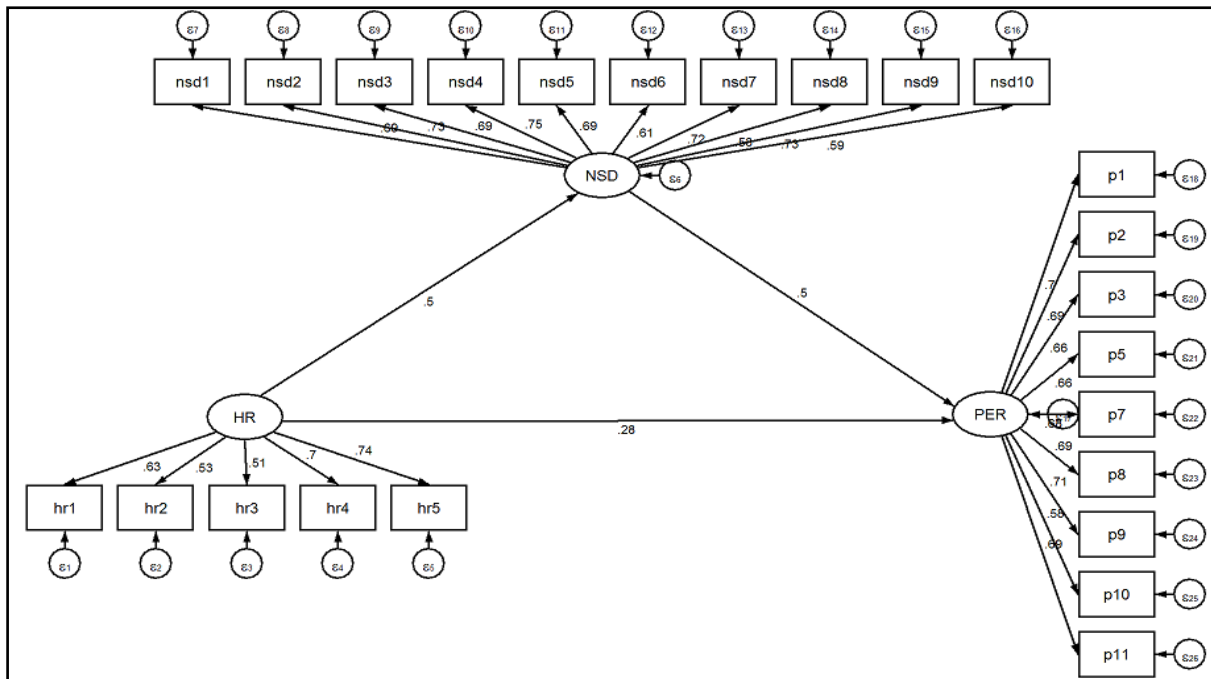
Goodness of fit: χ^2 : 828.74, RMSEA: 0.052, CFI:0.930, SMRR:0.040

Figure 7: Model (2) MKTG-NSD-PER



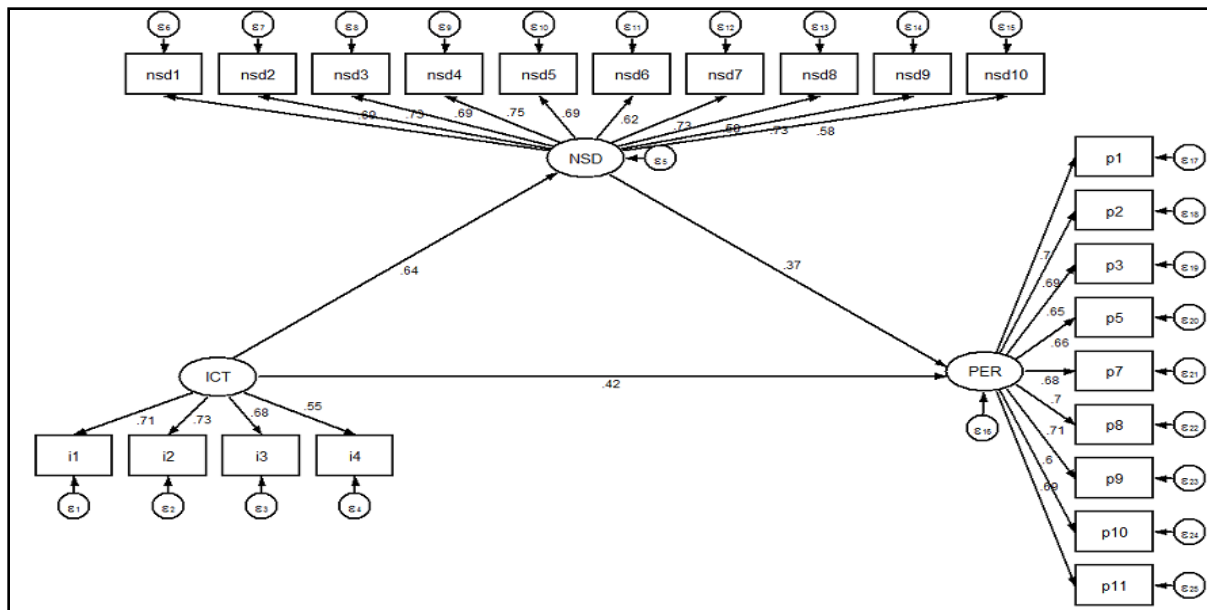
Goodness of fit: χ^2 : 904.27, RMSEA: 0.055, CFI:0.921, SMRR:0.042

Figure 8: Model (3) HR-NSD-PER



Goodness of fit: χ^2 : 813.32, RMSEA: 0.058, CFI:0.916, SMRR:0.062.

Figure 9: Model (4) ICT-NSD-PER

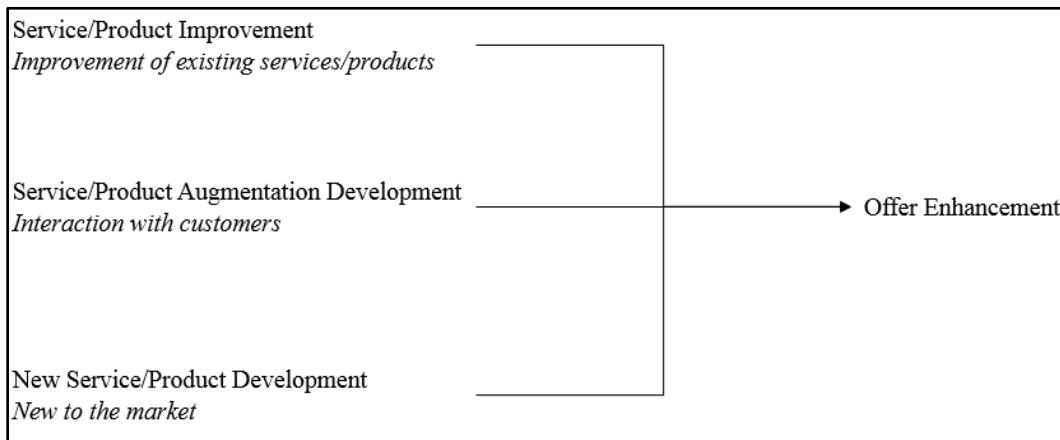


Goodness of fit: χ^2 : 825.75, RMSEA: 0.052, CFI:0.30, SMRR:0.040

RESULTS AND DISCUSSION

This paper is based on some assumptions, among others (i) a significant number of firms strive in maintaining contact with the market and (ii) there are difficulties in understanding the evolution of global demand. Thus, we speculate that new service development (NSD) is soundly (and positively) linked to the concept of offer enhancement (OE). Offer enhancement may be interpreted as a composite of the capability of a firm to improve its offer and existing product or services, together with action headed toward the reinforcement of interaction with customers as well as the ability to introduce products and services partially or totally new to the market (Johne and Storey, 1997).

Figure 10: Offer Enhancement



Source: Own elaboration but based on Johne and Storey (1997) pp. 192

Taking into account the standardised effects of the measure RM that encompasses the propensity toward innovation on the performance, we can infer the share of effects attributable to direct or indirect impact. Specifically, the total (standardised) impact equals 0.65 and is strongly significant ($p < 0.001$), this is a remarkable effect.

Since the direct effect is 0.38 ($p < 0.001$) it is possible to speculate that 58.5% (0.38 out of 0.65) of RM effects on performance are direct after controlling for pro-innovation attitude, while 41.5% of the RM effects on the overall performance result to be indirect.

Looking at the standardised effects of marketing and communication orientation on the performance, the total impact equals 0.69 ($p < 0.001$). Since the direct effect is 0.48 ($p < 0.001$) we can say that 69.5% of marketing and communication orientation effects on performance are direct after controlling for the attitude to innovate, while 30.5% of the marketing and communication orientation effects on the overall performance result to be indirect.

The interpretation of the standardised effects of the factor related to human resources on the performance, lead to infer the share of effects attributable to direct or indirect impact. Specifically, the total impact equals 0.53 ($p < 0.001$), this a remarkable effect provided its statistical robustness. Since the direct effect is 0.28 ($p < 0.001$) we can say that 52.8% of HR effects on performance are direct after controlling for the innovation propensity, while 47.2% of the HR effects on the overall performance result to be indirect.

Considering the standardised effects of the measure "ICT" on the performance, we can infer the share of effects attributable to direct or indirect impact. Specifically, the total impact equals 0.66 ($p < 0.001$), even in this case the effect is statistically significant. Since the direct effect is 0.42 ($p < 0.001$) we can say that 66.6% of ICT effects on performance are direct after controlling for the propensity to innovate and develop new services, while 33.4% of the ICT effects on the overall performance result to be indirect.

Table 4: Direct, indirect and total effects. Summary of the employed SEM models

Model	Outcome	Direct effect	Indirect effect	Total effect
(1)	NSD			
	<i>RM-NSD</i>	0.74***		0.74***
	PER			
	<i>RM-PER</i>	0.38***	0.26***	0.65***
	<i>NSD-PER</i>	0.36***		0.36***
	NSD			
	<i>MKTG -NSD</i>	0.76***		0.76***
(2)	PER			
	<i>MKTG - PER</i>	0.48***	0.21***	0.69***
	<i>NSD - PER</i>	0.27***		0.27***
	NSD			
	<i>HR -NSD</i>	0.5***		0.5***
(3)	PER			
	<i>HR - PER</i>	0.28***	0.25***	0.53***
	<i>NSD -PER</i>	0.5***		0.5***
	NSD			
	<i>ICT-NSD</i>	0.64***		0.64***
(4)	PER			
	<i>ICT- PER</i>	0.42***	0.24***	0.66***
	<i>NSD -PER</i>	0.37***		0.37***

Success and failures of innovation activities depend on factors both internal and external to the firms that operate in an industry. Considering the global competition, industry and governments shall cooperate as a system in order to fine-tune the offer and enhance competitiveness. Problems however arise when the government level struggles in producing effective products, services and policies. In this section we focus on the role of the Government in supporting tourism business and its development. To this extent Rubalcaba, Gallego and Hertog, (2010) review the rationale for innovation policies in services. They spotlight the significance of the various categories of failures, both of the market and of the system. Martin and Scott, (2000) associate failure of the market to the principal mode of sectorial innovation and delineate methods for innovation support from the public sector concentrating on precise sources of

market failure in innovation activities. Loch and Kavadias (2007) argue that innovation can be analysed with different theories of cultural evolution and propose a three level schema of innovation.

Table 5: Different level of innovations

	Levels			
	<i>NPD Process</i>	<i>Firm</i>	<i>Industry</i>	<i>Government</i>
Variety generation	Search, prototype, new ideas, external ideas	Gradual change from learning, new process sources externally, large changes.	New firms, new business unites, new entry from other industries.	Domestic and international competition: new policies.
Selection	Profit, market share, rick, presence, opportunity.	Discontinuation, lack of usage, gradual change.	Profit, growth, capital, mergers, bankruptcy.	Feasibility, opportunity, agreement between parties. Return on investments.
Inherence	Architecture, design principles, technology used.	Knowledge and competences, design principles “culture”	Industry workforce, brand equity, infrastructure	People, culture, economic situation.

Source: Authors, based on Loch and Kavadias (2007) pg. 6

CONCLUSIONS

There is an inadequate research attention which considers the simultaneous interrelationships among the analysed latent variables, NSD and performance within the context of tourism industry even if many innovations in tourism are increasingly grounded in services. We investigated factors which may drive or prevent success of firms within tourism industry. Considering the construct “RM” that encompasses the propensity toward innovation, we inferred the share of effects attributable to direct or indirect impact. Specifically, the total impact equals 0.65 ($p < 0.001$). Since the direct effect is 0.38 ($p < 0.001$) we stated that 58.5% of RM effect on performance is direct after controlling for pro-innovation attitude, while 41.5% is indirect. Taking into account the data resuming the standardised effect of the measure “Mktg”, namely the marketing and communication orientation, we indicated that the total impact equals 0.69 ($p < 0.001$). Since the direct effect is 0.0.48 ($p < 0.001$), 69.5% of marketing and communication orientation effect is direct after controlling for the attitude to innovate, while 30.5% results to be indirect. Instead, considering the standardised effect of the measure “HR”, the total impact

equals 0.53 ($p < 0.001$), since the direct effect is 0.28 ($p < 0.001$), thus 52.8% of HR effect on performance is direct after controlling for the innovation propensity, while 47.2% of the HR effect is indirect. Taking into account the data referred to the total impact of ICT on performance, the effect is 0.66 ($p < 0.001$). Provided that the direct effect is 0.42 ($p < 0.001$), about 66.6% of ICT effects on performance results to be direct and the remaining 33.4% is the indirect effect. This study also has research implications. Results, so far, have been very encouraging and require further analysis mainly, (i) in related markets (ii) analysing costs and benefits, (iii) through an international comparison of micro enterprises. Turning to managerial implications, it is worth noting that the revenue manager aimed to maximize the revenues, however, can serve the firm by having a clear understanding of the product/service acceptance, the market and the available technology. Focusing on the hospitality industry, this position's responsibility is ensuring the reservation effectiveness. Furthermore, results from the cited study highlights the need of construction of a customer-oriented culture.

To summarise, revenue management is a strategic human resource in terms of skills. Some major advantages that may bring are the following: keep control of historical data, organisation of room nights and revenues by market segmentation, insights from the high, medium and low demand, review of booking levels, identification of competitive pricing, and market share. This work has many limitations attributable to reliability, extensibility, methodology and resources respectively. Reliability: besides robust literature and official data, we collected data mainly via an online survey. There is robust scepticism about the worth of online surveys' responses. Many scholars suggest that the reliability of the data obtained through "old" mail surveys would be better (Deutskens, de Ruyter, and Wetzels, 2006). We suggest that future research on this topic shall deeply analyse the interactions of firms with exogenous factors (among others public authorities, regulation, economic and technological barriers) and the role that these factors may have in mitigating or improving the effectiveness of firms conduct.

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