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Improvement of public finance process efficiency: Theory and practice

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The topic of modelling and identification of fluids flowing into system processes is highly significant for public finance efficiency research. In 2017, research was conducted at the Budapest Business School, resulting in the creation of technical-mathematical models applicable to service processes (Gubán 2015). In a previous study, we introduced a possible extension of that research into practice: we were able to get an accurate picture of Hungarian public finance processes by thoroughly examining financial processes at the Secretariat of the Hungarian Academy of Sciences (Gubán et al. 2014).

This study provides a new perspective to this research topic by applying the previous results and a new mathematical model better suited for public finance. We describe status changes in the nodes of the organisation from a process and workflow aspect, thus creating non-interactive transformation systems. Our hypothesis focuses on objects flowing into public finance and a detailed examination of public finance processes. The hypothesis is the following: *'The efficiency of the public finance system is determined by the location change of the specific and examined objects in the fluid flows. The well-defined fluid flows of public finance processes ensure the efficiency improvement of the workflows.'* The first part of this study outlines the efficiency improvement tool adapted to public finance. The second part illustrates the practical application of this tool through an example.

Keywords: efficiency improvement, public finance, process, object, fluid flow.

JEL codes: C61, H83.

Introduction

With the development of the methodology presented in this study, the results of previous research could be applied to public finance processes. This is a highly unique topic within the analysis of service system efficiency due to the orgware environment of public finance systems being more strongly regulated than that of other service systems (Janssen–Estevez 2013). We shall define efficiency for public finance systems as follows: if the output status of the system is the same (or within a predefined range) as the target status expected after the process flow is over.

For this reason, we must also examine whether public finance systems can be fully integrated into the studied service systems. Analysis results have shown

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that technical and service processes can be handled together from a process improvement and process modelling aspect. However, public finance processes have extreme and unique characteristics from an efficiency improvement point of view, as general service systems can be modified relatively freely in order to achieve an operation that is close to optimum. Public finance systems are locally limited organisations, systems that have very hard limits.

Financial system processes may differ in both structure and operational characteristics depending on their location within the organisation, with highly differing process operational attributes at first sight. With a detailed examination however, we realise that they are similar in one respect: in any process, there is at least one "object" that flows through the whole process or process parts and that partly or fully utilises available resources at several "locations" (Bloch–Bugge 2013).

By analysing the financial systems of the organisations we examined, we concluded that the fluid (the aforementioned object) is a piece of data, material or resource which flows, may transform and can be measured as a piece of information at any node of the flow. We shall call a transaction every event in the financial process that has an impact on the information attribute of the fluid. The timeframe of this characteristic (that can be regarded as an axiom) is fixed, it includes at least one data value (message), and its data content and time stamp cannot be modified. The process is determined by the transactions impacting the fluid within the given timeframe and at the examined nodes, i.e. what activities must or are supposed to happen (Bányai et al. 2015).

Let us examine the following assumptions regarding the fluid:

- Can it be treated as a basic fact that an initial fluid can be found in any financial system?
- This fluid will always generate an initial transaction that is created by a deterministically or stochastically generated "causing" object, and
- This fluid can and should appear at one of the system inputs.

A fluid – and a transformation – shall indeed appear at every system input, otherwise that input would not be a part of the process system. As a transaction (event) cannot happen without an object (cause), we can consider the existence of an initial fluid to be evident. Furthermore, the initial object (signal or message) always flows through the whole system. However, due to its information attribute, it may be – and it mostly is – transformed during the process. Thus, based on

the above and on Mezei–Gubán (2017), we can consider the second part of the hypothesis proven, meaning that efficiency improvement is possible in public finance systems.

When examining the hypothesis for this study, we shall start with a simple generalisation. In the processes of public finance systems, the observed flows (e.g. information, material, resource, emission, etc.) are, in general, location changes of the specific and examined objects. These location changes show alterations occurring over time in the parameters and attributes of the object, so the flow can be considered a location change of objects – we call this the aspect relative to the system. If a location change is only virtual, i.e. no spatial movement can be detected (but only changes in the characteristics of the fluid), then the processes can generally be considered changes in the object – we call this the object aspect.

The latter case can handle more changes, including those without physical movement. This is most frequently a data change where no location change happens on a physical level – when analysing things from a user perspective – because the data stays at the same location from a user standpoint, only its "value" changes. For this reason, we may use the same method to examine both aspects of object flow and the result will not change. Gautam et al. (2017) have a similar approach in their segmented models.

The object as a flow in financial systems

In our further examinations for the foundation of practical application, the fluid itself will describe its status changes over time. This is beneficial because in many cases – primarily in the case of service or public finance processes – fluid flows of material or information origin cannot be clearly found, and neither can a location change be observed. Still, it is important to create a dynamic model that can describe changes in financial systems in such a way that it can be applied to any process description – making a sector-neutral efficiency improvement possible.

The nodes in the system (e.g. elementary employee activity, defect location, checking point, etc.) and their status changes are a great starting point. This means we disregard the classical process approach where the process nodes are locations where fluids can be transformed and this is the only attribute important from a process aspect. In this study, the node itself is the "process", meaning that value changes in the components of the node (attributes, status variables) constitute the

process itself. These status changes themselves constitute a process system as well, and the "changes" found there will be the fluids, for which an examination methodology has already been established (Kása–Gubán 2014). Thus, if we create a model in which status changes can be divided into simple transformations, then practical status change systems will be easily adaptable to public finance systems.

Outline of object flow model

Suppose that O is a node with a finite status characteristic set (status variable set), including all status characteristics that characterise that node in $[t_1; t_2]$ time period. If S_i status characteristic does "not characterise" the node at a specific $t \in [t_1; t_2]$ point of time, its value shall be Ø, which is not a real value but only a symbol, so that the value prevails in any comparison to it. Thus, hereinafter we expand the original A_i status set – for function-like descriptions – to $\bar{A}_i = A_i \cup \{Ø\}$. Furthermore, hereinafter let us suppose that S_i is a status characteristic of node O (hereinafter, in order to comply with Kása–Gubán (2014), we shall call the node the object), the value changes of which can be described in the examined time period by the function $S_i(t)$: $[t_1; t_2] \rightarrow \bar{A}_i$. The full object change is the following:

$$S[t_1; t_2] \rightarrow \bar{A}_1 \times \bar{A}_2 \times \ldots \times \bar{A}_n (= \mathcal{A}). \quad (1)$$

This means we look at ongoing changes for the full status characteristic at the same time. This raises the question: what changes can be regarded as still belonging to the object, i.e. what degree of change is necessary for it to become a different object. For example, in wood processing, when does it become paper, i.e. a totally different object – holometabolism.

In our examination, suppose that our object is in O object type at t point of time $[O; T_O; S_O(t)]$; T_O is the quality of the specific object type and it is in $S_O(t)$ status system, i.e. we interpret the object as a unit with a qualitative characteristic that changes over time. The aforementioned type change may include a sudden change in status system that is a new object type (holometabolism), which in our example can be a log, a board, wood chips, paper, etc. On the other hand, the quality of object type can be interpreted in our example as high-quality white paper, recycled paper, etc.; in the examined systems, the object type characteristics are implicit and given. As our example has shown, neither the type nor the quality is straightforward, so it is advisable to create the system model in a fuzzy system.

This is because a flow system can only be monitored with discreet methods, meaning it can only be achieved with sampling. For this reason, we shall only deal with status changes that are discreet in time – this further strengthens the

possibility of using fuzzy and neuro-fuzzy modelling and simulation in practice in the future.

We shall conduct the examinations for a fixed system here and we shall refrain from developing a detailed mathematical model in this article. We shall also ignore the reasons for transformations and controlled status changes working in public finance organisations (flow systems) because these should be examined on a case-by-case basis with primarily economic science tools.

Suppose that, in the examined system, fluid flow (i.e. the series of status changes flowing through the system during a period of time) is $FF(t)$: $[t_1; t_2] \rightarrow A_1 \times A_2 \times \ldots \times A_n (= \mathcal{A})$, where $[t_1, t_2]$ is the examined flow time, A_i ($i = 1; 2; \ldots n$) is the status set of a specific characteristic with both upper and lower limits.

Let us say the reason for the status change occurring at $t_0 \in [t_1; t_2]$ point of time is *T transformation*. Transformations appear in a discreet way – for reasons mentioned above – but their effect will be realised $[t_0; t_0 + \Delta t]$ ($\Delta t > 0$); it is reasonable to expect that time periods may overlap. We can interpret this model similarly to an extension of the set of traditional medical therapies (treatments), where effects and side effects may both arise. In this case, we include both the effects occurring after the therapies are completed and spontaneous changes. We call the latter spontaneous transformations, where needed.

Suppose that T is the Transformation and $[t_0; t_0 + \Delta t]$ ($\Delta t > 0$) is the effect's period of time, and system status at t_0 initial point of time is $\mathbf{a}_{t_0} \in \mathcal{A}$ and status change of S_i characteristic will be described by the following function: $f_i(t; \mathbf{a}_{t_0}; t_0):[t_0; t_0 + \Delta t] \rightarrow \mathbf{a}_t$ ($\Delta t > 0$). This will clearly ensure an ideal model only if no other Transformation effect has taken place in the system, impacting that specific characteristic. Let us suppose that in $[t_1; t_2]$ time period, a finite number of effects (and a finite number of side effects) take place in the system. Thus, at a specific $t \in [t_1; t_2]$ point of time, Transformation effects can be specified in the following general format:

$$\varphi(t):[t_1; t_2] \rightarrow \mathcal{A}. \tag{2}$$

The above function cannot be continuous, of course, as a new Transformation can immediately cause a sudden change; as a consequence, we get an intermittent at least once differentiable $n + 1$ dimension surface, which is a sufficiently flat surface for examinations.

Thus, the actual status of S_i characteristic does not only depend on the current transformation but also on the effect of other transformations during that period

of time. This may cause a very different effect: transformation effects may add up, strengthening or amplifying each other. On the other hand, they may also cancel each other, or only the "weaker" or "stronger" effect may take place. We shall not go into detail on these models in this paper, but they can be described with simple function operators.

Let us examine a simple case where only one Transformation has an effect. We call this Transformation *good* if it shows an asymptotic characteristic during the examined time, i.e. it moves towards one specific value over time, and this limit value is equivalent to a predefined value. Furthermore, the Transformation will remain stable, i.e. the limit value should not be changed by the effect of other effects. For example, a petition that has been sent back due to missing documents will be completed as expected sooner or later.

In practice, the speed of most Transformations (status change) is proportional to the difference between current status (measured) and ideal status (in a specific period of time). If that is the case, the function for the effect can be described with the following simple exponential form:

$$a(\tau) = (a_0 - a_{opt})e^{k\tau} + a_{opt} \tag{3}$$

For such models, the individual effect of the Transformation at a specific moment can be easily determined. Thereby we also gain the information whether the therapy applied to the financial system is moving in the "right" direction, whether the "treatment" is effective.

Of course, one Transformation may have an effect not only on one status but on several other states as well. We call these – if they are not intended – side effects. Thus, a Transformation can be generalised in the following way:

Suppose that T is the Transformation and $[t_0; t_0 + \Delta t]$ is the effect's period of time, status change function for S_i characteristic $f_i(t)$: $[t_0; t_0 + \Delta t] \rightarrow \mathcal{A}$ $(\Delta t > 0)$, where $\Delta t = max(\Delta t_i; i = 1; 2; \ldots n)$ i.e. the time period of the effect or side effect with the longest period – the resulting effect of Transformations that have an effect at that specific point of time. Thus, in financial systems, it is possible to define the duration and scope of a transformation's effect, so the various "consequences" of the transformation are manageable.

Multiplication of transformations: We shall define the multiplication of transformations for a general description of transformations acting together. Suppose that all transformations having an effect in $T_1; T_2; \ldots; T_k$, $k > 2$ a $[t_1; t_2]$ period are, $\varphi(t) = [a_{1t}^{T_i}; a_{2t}^{T_i}; \ldots; a_{nt}^{T_i}]; i = 1; 2; \ldots; k$'s influence function. Multiplication

of transformations $\mathcal{T} = T_1 T_2 \cdot \ldots \cdot T_k$ at t point of time is the influence function which specifies the current status system: $\varphi_{\mathcal{T}}(t) = [a_{1t}^{T_i}; a_{2t}^{T_i}; \ldots; a_{nt}^{T_i}]; t \in [t_1; t_2]$.

Independence of transformations: Transformations that do not have an effect on each other's states and do not influence each other's effects are more easily manageable. For this reason, we introduce the concept of independence of transformations. Two Transformations $T_1; T_2$ are *independent* if the Transformations have a sole effect at $[t_1; t_2]$ period of time on a subset of the status set. This means their effect status sets are disjoint sets – they do not have a common element. As a consequence of this definition, the relation is symmetric. Thus, in financial systems, transformations are "dissociated" from each other on both sides.

In order to examine reflexivity, we must utilize a few conditions. On the one hand, a transformation may appear several times at different points of time during $[t_1; t_2]$ period of time, in which case its effect on the states will not be independent. (For example, in case of an asymptotic dampening effect, one impulse can change the asymptotic behaviour, or the asymptote. Independence could be reflexive in one case only: if simultaneous identical effects appear in the system as one effect – i.e. the system has a redundancy filter.) This expectation is not very realistic, so we can conclude that the relation is not reflexive. Hereinafter, we will only use transformations that are irreflexive.

It is also crucial to examine transitivity. When we think about examples in everyday life, very often they are not transitive. It is feasible that medicine A and B and medicine B and C pairs have no effect on each other during a treatment. But medicine C may have an effect on a component of medicine A, so they might not be used at the same time during a treatment. Examining the above definition, we can engineer a case where transitivity is not achieved, meaning that the independence relation is not transitive.

The above definition can be extended to the independence of any number of transformations, i.e. a transformation is independent from a transformation system if the transformation is independent from each element of the transformation system in pairs.

In case of a combined effect of Transformations (multiplication transformation), it is important to examine whether they can be decomposed to the multiplication of independent Transformations at a specific $t \in [t_1; t_2]$ moment in time. Our hypothesis is that they can, however we shall omit the reasoning in this study.

Since the above assignment can be performed for any $t \in [t_1; t_2]$, we shall define transformations $\hat{T}_i$; $i = 1; 2; \ldots n$ as their effect function being: $\varphi_{T_i}(t) = \varphi_{T_i t}$; $t \in [t_1; t_2]$. These functions satisfy the definition of independence at all points in time, so the generated $\hat{T}_i$; $i = 1; 2; \ldots n$ transformations will realise the effects of the original transformations and will be independent transformations.

If we accept the above hypothesis, then the transformation effect function can be described for a specific status in the following form:

$$\varphi_{T_i}(t) = \sum_{j=1}^{k} \alpha_j(t); t \in [t_1; t_2]; i = 1; 2; \ldots n \quad (4)$$

Having clarified the issues above, we can build a model in order to assign a simulation model to public finance systems in the following chapter. This is because the system of processes and transformations can be mapped into the tool outlined in the previous part.

How to do this mapping for a public finance system?

The existence of public finance systems is ensured by legislation which determines the function of the financial system and provides its orgware seed as well. It is often difficult to find fluids that show location change in such processes because, in some cases, it is human behaviour that constitutes the system's processes. The "side effects" of transformations that occur in such places very often worsen the effectiveness of fluid operation flow in another process. For this reason, it is crucial to only perform modes of action (process element changes) which have the least possible side effects.

Of course, it is impossible to create a system without side effects unless it is an ideal case (according to the above model) – see redundancy filter in database theory. Let's return to actual public finance systems: the steps of the budget cycle, some of the external and internal events, and processes, all of them belong to the delegated functions. As mentioned in the introduction, public finance processes are event-controlled, and the event always includes at least one data with an information characteristic.

We have already accepted it as a fact that an initial fluid can be found in the system, and this fluid shall always be an object appearing at one of the system inputs that triggers or initiates the transaction. Furthermore, the initial fluid always flows through the system and has an information characteristic.

In the next part, we shall adapt our hypothesis based on a previously analysed financial process of a self-managed Sample budgetary institution (Gubán et al.

2014). Sample is a legal person which has an independent budget, as well as independent financial authority and responsibility. Sample performs the tasks related to management, bookkeeping and data provision with regards to the appropriations of its budget, so all functions (that are relevant for this study) of public finance management are present in the organisation.

According to the Organisational and Operational Rules endorsed by the Sample public finance organisation, the maximum lead time is 15 days. This means that it can take up to 15 days from the generation of initial fluid until the final event, in the case of an error-free process. Of course, this does not include the time period needed for an external partner to perform its tasks, or the "grace period" specified by law – e.g. the deadline for an invitation to tender in the case of public procurement.

We must highlight the 'budget implementation' step in the budget cycle of the Sample public finance organization as this step includes some very complex processes. For this study, we have chosen the investment procurement module where all processes (that may occur in the implementation of the budget step) are present. Our specific example will be the procurement of a solar collector with its related public procurement process. The table on the next page shows the events occurring in this example.

The node indicated in grey (12) is outside of the Sample budgetary institution's organisation. This is an event that the Sample budgetary institution cannot influence; the parameters of the construction contract prevail here.

Most of the fluids in the previous table are not of material nature (electronic mails or pieces of information are flowing in the process), but some material fluids can also be found, such as solar collector and paper-based documents. In the case of type transformation, the nature of the information carrier document changes, or an electronic mail becomes a paper-based document. In this process, the initial fluid is the warning sign that occurs in the controlling source node. In this example, the drain node is the finance department, and the closing fluid is the bank transfer.

Some redundancy can be found in the investment expense process (events #1-3) in the preparation phase. If this series of activities only runs once at most, the time required for the process can be reduced as cloning increases uncertainty. Reducing lead time with logistification (eliminating cloning) results in lossless operation (Mezei–Gubán 2017).

Table 1: Solar collector procurement in detail

No.	Node	Input	Output	Nature of transformation
1	Controlling	High energy consumption	Warning sign	Creation of new element
2	Engineering department	Warning sign	Informal e-mail	Type
3	Budget holder	Informal e-mail	Positive response	I/O
4	Engineering department	Positive response	Claim notice	Type
5	Budget holder	Claim notice	Request letter	Type
6	Finance department	Request letter	Draft commitment document	Type
7	Finance manager	Draft commitment document	Countersigned document, permission letter	Type, creation of new element
8	Public procurement department	Permission letter	Summary note	Type, creation of new element
9	Procurement	Summary note	Draft construction contract	Type, combining
10	Legal department	Draft construction contract	Approved construction contract	I/O
11	Procurement	Approved construction contract	Ordering, construction contract	Type
12	Supplier	Ordering, construction contract	Solar collector (a), report (a), invoice (b)	Type, creation of new element
13	Accounting	Invoice	Request for professional completion certificate	Type
14	Engineering department	Solar collector, report, invoice	Professional completion certificate	Type, combining
15	Accounting	Professional completion certificate	Booked invoice, draft transfer order	Type
16	Finance department	Draft transfer order	Record of validation	Type
17	Finance manager	Record of validation	Expense transfer order	Type
18	Finance department	Expense transfer order	Bank transfer	Type

Source: Own editing – based on laws and internal regulations of Sample

Based on Table 1, we are able to determine that the finance department and finance manager nodes of the examined process in the public finance system from

our example are strategic nodes. At the same time, these two are also the bottleneck nodes, since there is no alternative route to conduct the solar collector procurement.

In a financial process system, bottleneck nodes are usually the most problematic ones. Most frequently, the fluid has to wait, slow down or be damaged in these nodes. For this reason, the focus should be on these nodes when implementing potential process improvements. Based on the above, hereinafter we only have to extend our examination to the nodes and the status changes occurring in them over an examined period of time. This period is, in most cases, determined by the starting time of a transformation defined by the appearance of an event and the time the last fluid related to the event "flows out" through the output.

When improving process efficiency, we focused on process lead time and service quality indicators (KPIs). Also, when analysing process efficiency, it is imperative to also examine cost efficiency, but due to the special operation of budgetary management (annual budget management, no profit expectation, withdrawal of remaining money as the norm), this is not relevant for this study. We should also add that when analysing efficiency, we regard it as the full process efficiency (not node efficiency) that is interpreted as one batch in the budgetary organisation.

The maximum lead time of the solar collector procurement is determined by the OOR of Sample. According to the Organisational and Operational Rules endorsed by Sample, the maximum lead time is 15 days. This means that it can take up to 15 days from the generation of initial fluid until the final event, in case of an error-free process. Of course, this does not include the time period needed for an external partner to perform its tasks, or the "grace period" specified by law – e.g. the deadline for invitation to tender in the case of public procurement.

Based on previous research data (Mezei–Gubán 2017) and some on-site sampling[3], the following benchmarks can be established for the Sample budgetary institution:

- The expected maximum lead time is reached in 75-80% of completed processes, but the lead time can reach up to 160% of the standard in an extreme case;
- The expected service quality is fulfilled in 80-85% of completed processes, but, when a new process is introduced, this can be as low as 60%.

[3] We took 5-5 samples from all the completed processes examined at the public finance organisations participating in the research.

Lead time and service quality are in a close relationship, best demonstrated by the concepts of TPM (Total Productive Maintenance). (Due to a lack of relevant public finance publications, we used literature on the lean approach.) According to this, the most important factor is the focused elimination of problems and reducing efficiency loss in crucial areas. TPM measures equipment productivity with an indicator called OEE (Overall Equipment Efficiency). The primary aim of TPM is to improve this factor. When doing a TPM activity, it is necessary to continuously measure OEE and systematically suppress losses that cause the most harm (Péczely 2012).

The value of the OEE indicator never exceeds 100% and is calculated the following way:

OEE = availability x performance x quality

The accepted world standard target is 85%, which is made up of the following values:

- availability 90%,
- performance 95%,
- quality 99%.

In this research, we adapted the OEE indicator to the processes of the Sample budgetary institution. We calculated an OPE (Overall Process Efficiency) indicator value for the Sample budgetary institution; however, the value is not related to its tools or nodes, but to the whole process. The components of OPE indicators are the following:

- Availability, in this case, is the base working hours of the employees, taking legal requirements into consideration.
- Performance shows the percentage of completed processes where the full series of activities were finished within the expected maximum period of time.
- Quality shows the percentage of completed processes that were free of errors.

In the case of the Sample budgetary institution, the OPE indicator before logistification is 53%, consisting of the values below:

- availability 89% (30 minutes lunch time and break times according to the Labour Code),
- performance 75% (lead time, calculated with a lower value),
- quality 80% (service quality, calculated with a lower value).

Since availability cannot be increased due to legal requirements, the theoretically achievable OPE target for the Sample budgetary organization is

83%. The expected minimum OPE after logistification is 70% (Muchiri–Pintelon 2008), so our target range shall be 70%-83%.

Analysing on-site samples and previous empirical data, we can determine that inadequate lead times can be corrected by the following method: eliminating redundancy (events #1-3), where we can expect a 9% performance improvement. Thus, the lower value of the performance rate is modified to 84%, resulting in an OPE value of 60%. This is a change in the right direction, but it does not yet reach the targeted efficiency range.

Process efficiency can be further increased if only electronic documents flow between the nodes, and the electronic signature and time stamp are used instead of signatures and stamps. One possible solution for this is EDI (Electronic Data Interchange). EDI aims to fully replace paper-based documents with a telecommunications channel for the flow of standardised messages. The advantages of introducing EDI are the following:

- Reducing and/or avoiding paper usage;
- Exchanging information in real time;
- Better data accuracy (by avoiding errors of manual data input);
- Data traceability and controllability;
- Accelerated system reaction time due to reliable information.

If only the electronic signature and time stamp were used in the examined process of the Sample budgetary organisation, a 4% performance increase can be expected from this therapy. If the Sample public finance organisation were to use EDI technology at all events, performance can be increased by a further 3% - that is 7% in total. Effectively, the achievable OPE value (in case of 91% performance) will be 66%, which is significantly greater than the initial value, but still it does not reach the targeted efficiency range. The OPE indicator value can be further increased if the bottlenecks at strategic nodes are solved by process scheduling and process design (e.g. flexible time window).

As for increasing human resource capacity, this might be possible at the finance department, but it is not feasible at the finance manager node, so this is not an acceptable therapy in this case. Another possible therapy would be to optimise the time schedules of public finance system processes with process design tools. The timeframe for each process is fixed, so by introducing a flexible time window, we could relieve bottleneck pressure and reduce losses over the examined time period.

According to the suggestions made during in-depth interviews (Gubán et al. 2014), the quality rate of the Sample budgetary institution could be improved by

training and clear work instructions. However, such training should be interpreted as gaining deeper knowledge of the financial IT system in use, not as advanced general studies. Similarly, clear work instructions should mean a professionally sound, easy-to-understand user manual that contains precise descriptions of all activities belonging to the explored processes. According to interviewees' opinions and experts' estimates (Nallusamy–Majumdar 2017), such a therapy could result in a minimum of 7% increase in the quality indicator. If that is the case, our cumulated OPE value changes to 71% (0.89 x 0.92 x 0.87) and has reached our expected efficiency range.

Based on the above, if the finite set of transformations is known, then an independent (virtual) transformation system can be engineered for them based on the thesis proven in the first part of this study – this system will be without "side effects", i.e. influencing only and exclusively one status. This also means that any event and/or status change that is in effect at any time can be divided into such intervention methods that will only push the status change in the right direction and will have no effect on any other status. This is a very high expectation that has the potential to create a transformation system with much greater cardinality, but it has no effect on the current examinations as our sole target was to achieve efficient operation.

Summary

Having established a customised methodology in this study, it will be possible to apply the scientific results of previous research to public finance processes. This is a highly interesting and special topic in the examination of service systems. At the same time, results have shown that technical, service and public finance processes can be handled together from a process improvement perspective. If we examine the processes explored in this study from an internal status change angle instead of the traditional flow aspect, they can be managed and improved the same way as other, more flexible service process systems.

The public finance processes introduced in this study are an extreme case, with unique characteristics from an efficiency improvement point of view, since general service systems can be relatively freely modified in order to achieve an operation close to optimum. On the other hand, public finance systems are locally limited systems. However, this should not cause any surprise after the initial examinations, as we can see they can be managed with the same methods and

solutions as any other finance process system upon closer inspection – although management efficiency may be lower.

The most problematic parts of a finance process system are the bottleneck nodes. Most frequently, the fluid will have to wait, slow down or be damaged in such nodes. For this reason, the focus should be on these nodes when implementing potential process improvements. In practice, this means that any process improvement should be implemented for all affected nodes and cannot be done separately. When implementing organisational changes, the independent transformation model should be used only to correct processes to go in "the right direction" and "without side effects".

References

Bányai, T.–Veres, P.–Illés, B. 2015. Heuristic Supply Chain Optimization of Networked Maintenance Companies. *Procedia Engineering* 100, 46–55.

Bloch, C.–Bugge, M. M. Public sector innovation – From theory to measurement. *Structural Change and Economic Dynamics* 27, 133–145.

Gautam, S.–Maiti, J.–Annamraju, S.–Sarkar, S. 2017. Segmented point process models for work system – safety analysis. *Safety Science* 95, 15–27.

Gubán, Á. 2015. *Gazdasági folyamatok entrópiája és mérhetősége.* In: Solt, K. (ed.) *Alkalmazott tudományok II. fóruma: Konferenciakötet*. Budapest: BGF, 170–176.

Gubán, Á.–Kása, R. 2014. Conceptualization of fluid flows of logistificated processes. *Advanced Logistics Systems: Theory and practice* 7(2), 27–24.

Gubán, Á.–Kása, R. 2015. Ergonómiai mérési eszközök a fluidumáramban. *Repüléstudományi Közlemények* 20(2), 232–240.

Gubán, Á.–Mezei, Z.–Sándor, A. 2014. *Service processes as logistic workflows.* In: Katalinic, B. (ed.) *DAAAM International Scientific Book*. Vienna: DAAAM International, 485–500.

Janssen, M.–Estevez, E. 2013. Lean government and platform-based governance – Doing more with less. *Government Information Quarterly* 30(1), S1–S8.

Mezei, Z.–Gubán, Á. 2017. Fluidum áramlás és logisztizálás a közpénzügyi gazdálkodási folyamatokban. *Logisztika-Informatika-Menedzsment* 2(1), 71–84.

Muchiri, P.–Pintelon, L. 2008. Performance measurement using overall equipment effectiveness (OEE): Literature review and practical application discussion. *International Journal of Production Research* 46(13), 1–45.

Nallusamy, S.–Majumdar, G. 2017. Enhancement of overall equipment effectiveness using total productive maintenance in a manufacturing industry. *International Journal of Performability Engineering* 13(2), 173–188.

Péczely, G.–Péczely, Cs.–Péczely, Gy. 2012. *Lean 3 – Termelékenységfejlesztés egységes rendszerben.* Szeged: A. A. Stádium Kft.

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21(137), 18–49.

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"Discover your destination!" A classification of tourism slogans of countries around the world[1]

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This study attempts to classify the tourism slogans of countries around the world into groups. The categorisation is based on an analysis of slogans from 170 countries, classifying them into 11+1 groups. The results show that slogans including the name of the country (29.4%) and solutions including the term You/Your (12.9%) were the most popular, while 10.6% of the countries tried to position themselves by linking their slogans to a larger geographical unit.

The results also demonstrate that "Discover"-type slogans (8.8%) and mottos including the words "beautiful" and "wonderful" (9.4%) are still very popular. The following six categories that use words such as life, nature and happiness or depict feelings only amounted to 2.7–7.1%. The share of slogans that could not be classified into any of the categories is 18.2%. In addition to the 170 countries using any kind of slogans, 26 countries do not have a tourism slogan. These countries can be considered as a thirteenth group.

Keywords: slogan, destination branding, country branding, tourism marketing, national identity.

JEL codes: M31, M37, M38.

Introduction

In addition to logos, slogans may be the most tangible elements in the marketing and communications of a brand. Both slogans and logos are good if they capture the character and story of the brand, distinguish it from its competitors and are capable of inspiring and activating potential customers.

The abovementioned statements are not only valid for "classic" products or services, but they can also apply to countries. Countries may have a slogan and a

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logo, and they can even use multiple ones in practice – creating separate slogans and logos for the institution dealing with tourism, the organisation stimulating investment, initiatives to promote the export of local products, and so on.

The present study examines tourism slogans. Firstly, these may influence the most people (as opposed to slogans promoting investment for a significantly smaller target group, for example). Secondly, tourism is a priority for almost all countries and most of them would like to further increase the importance of the industry and the incomes generated by it (Cook et al. 2009). Last, but not least, there is another practical consideration: tourism slogans are the easiest to find.

As regards the structure of the article, the review of literature starts with a more general topic, discussing the attributes of a good slogan and the most important aspects in the creation of a slogan. The study then examines the most significant findings of earlier studies analysing country slogans.

The focus of primary research was to classify the countries' known tourism slogans (170 slogans in total) into categories. During the analysis, tourism slogans were mostly grouped according to the words used in them. The novelty of the results is proved by the fact that no similar attempts have been made, especially not at a global level, including the slogans of all countries.

Comparing the new findings to the results of a 2009 country slogan database, the study also examines the question whether the slogans of the countries are constant or whether there are several countries that have replaced their slogans in the past ten years.

An overview of relevant literature, theoretical framework

The slogan as a battle cry

If we are looking for the origin of the word 'slogan', we must travel through time and space back to Gaul. Gallic people used the word 'sluagh-ghairm' as a battle cry (Healey 2009). This was the thing soldiers lined up behind, and as soon as they heard it, they knew they had to give their lives and blood for victory, their common goal.

Although we do not use the word as a battle cry anymore, we can be sure that "similarly to brand names, slogans are an extremely effective tool for the development of brand equity" – as Kotler, "the Pope of Marketing", and Keller, one of the most famous experts of branding, wrote in their book *Marketing Management* (Kotler–Keller 2006. 378). They also highlight that the role of the

slogan is to provide a reference point or clue to customers in order to make them understand what's behind the brand, and what makes it special.

It is worth quoting Ildikó Sárközy, the editor of the website szlogenek.hu: "A slogan is a sentence that includes the textual message of a brand. In the case of a good slogan, the unique selling proposition is expressed. The slogan is an essential part of brand communications: it is its basis and climax at the same time" (Sárközy 2009).

A similar definition of slogans is given by Denton Jr. (1980), stating that they are rhetorical devices and that they are usually brief expressions or phrases, constructed and utilised in marketing, to build or reinforce an image or identity (O'Guinn et al. 2011).

According to a theory by Supphellen and Nygaardsvik (2002), slogans are "short phrases that communicate descriptive or persuasive information about a brand". Dowling and Kabanoff (1996) state that their main role is to assist the brand's selling proposition.

However, creating a successful slogan that achieves the desired results and meets its goals is far from simple. Its process, formula and guidelines have been summarised by several prominent advertising professionals and scholars, including Kohli et. al. (2007), Salem (2012), Papp-Váry (2013) or Gaille (2017).

Despite the importance of slogans, there are actually only a few of them that we can recall. What is Nike's slogan? Readers may easily say "Just do it". And what is the slogan of its greatest rival, Adidas, the market leader in Europe? It is not easy to recall. Well, its current slogan is "Adidas is all in", and the preceding one was "Impossible is nothing". Or let us consider Coca-Cola: the great influence of the brand is demonstrated by the fact that, according to surveys, Coca-Cola is the second best known word in the world after OK. But what is the slogan of the brand? "Always"? Or "The real thing"? Well, these were its slogans some time ago, but Coca-Cola has been using a different one for some time now. Its current slogan (used since 2016) is "Taste the feeling".

This also highlights two important things. On the one hand, the consistency of using a slogan is important. The "Just do it" slogan has been used by Nike for 30 years, since 1988, while Adidas and Coca-Cola have been changing their slogans quite frequently. On the other hand, it can also be seen that slogans are not as important as marketers would often think. Quite big brands can be built without people knowing their slogans (for example, not many people could recall

Google's slogan). At the same time, this does not mean that a good slogan would not be greatly useful in marketing and sales. Nevertheless, its influence should not be overestimated, either.

It is no coincidence that, in addition to its practical application, the topic has also inspired scholars of various disciplines worldwide. Zuyun (2006) and Dong (2013) examined the linguistic application of slogans in their studies. One of the most important basic functions of a good slogan – making products or services more attractive – also served as the central theme of a well-known book (Ries–Ries 2015).

A study by Fransen et al. (2007) adds that slogans frequently try to associate brands with personal dreams and ambitions, exerting benefits to consumers, since purchasing those brands might help the consumer in achieving and expressing ideals and aspirations.

In their study, Duarte and Galvao (2016) examined the effectiveness of slogans in the consumer market, testing which factors might influence the brand slogan recall and recognition. An empirical study was conducted via a self-administered original questionnaire, applied to a sample of 156 elements, analysing the recall and recognition rates for twenty-nine slogans from nine different product categories: retailing, cokes, juices, water, sports, telecoms, beer, personal care, and ice cream. The independent variables used to analyse each slogan recall and recognition were: slogan length, slogan antiqueness, brand industry, slogan language, brand consuming frequency and sympathy towards the brand. A positive relationship was found between the antiqueness of slogans and their spontaneous recall. It was also found that the spontaneous recall of slogans showed high variation among brands and shorter slogans had higher recall rates. Other variables (slogan language, brand consuming frequency and sympathy towards the brand) did not show a significant impact on the recall/recognition of slogans.

Country slogans from battle cries to the attraction of tourists

The abovementioned works typically include corporate examples, but several authors in the tourism industry also discuss the role of slogans in destination marketing (Li–Qu 2010, Gali et. al. 2016). Nevertheless, valuable writings on their use in country branding (the theoretical background of the present study) have also been published, including Supphellen–Nygaardsvik (2002), Azambuja–Pipoli (2010), and writings by Dinnie (2012) focusing on Asian countries.

In addition to product slogans, country slogans were also used as early as decades or even centuries ago. Nevertheless, their purpose was different at the time – they did not serve to attract tourists and investors, or improve the sales of the country's products. Their focus was much more on communication, or they functioned as status reports on the political situation. Even more often, it provided a vision for local people.

A hundred and fifty years ago a Canadian historical document used the words "peace, order and good government" to describe the country. Later, "From Sea to Sea" (A Mari Usque Ad Mare) became the official Canadian national motto, also included in the Canadian coat of arms. Originally, it was some kind of a vision at a time when they wanted to expand the territory of the country from the Atlantic Ocean to the Pacific Ocean.

The best known "country slogan" to this day, "liberty, equality, fraternity" (Liberté, Egalité, Fraternité), also appeared as some sort of a vision and was left to us from the time of the French Revolution. In the mid-20th century, the slogan was also included in the constitution of the country.

The national mottos of Uruguay (Liberty or Death, in Spanish: "Libertad o Muerte"), Cuba (The Fatherland or Death, in Spanish: "Patria o Muerte"), or Zimbabwe (Unity, Freedom, Work) were born in a similar way. The latter is particularly interesting because, according to some statistics, unemployment in Zimbabwe was 95% under the presidency of Robert Mugabe. Regardless, the role of country slogans has also changed in the meantime. The aim of 21st century mottos is not only and not primarily some political statement or vision and they are not addressed to people who live there. They are much more meant to provide foreigners (ideally tourists, investors and buyers of the country's products at the same time) with arguments supporting the country. "A good slogan emphasises the general, still unique characteristics of a state that can be attractive for potential tourists", says Richard Lee, an expert on the topic, as quoted by Richardson–Cohen (1993).

However, this is hard to achieve, therefore most country slogans – rather wisely – primarily target tourists. At the same time, this focus on tourists is still not enough to create a motto that is not overly general. When Jeremy Hildreth, one of the gurus of country branding and the author of the book "Brand America", visited Hungary in 2007, he said, "There are a lot of slogans like 'Discover …' – and you could substitute any country here. Or there is 'Land of contrasts'. I googled it, and it displayed the brochures of 69 countries, cities, or regions. It

was probably much more, but I got bored gathering them. It is tough to build a brand like that because you miss the most important part: the unique selling proposition." (Papp-Váry 2007).

Another expert, Graham Dann, wrote in his article *Differentiating Destinations in the Language of Tourism*, published in 2000, that most countries often advertise something that does not say anything special about them as their most important value. Bangladesh is "A country of friendly millions", Hungary has "The friendliest people in Europe", Irishmen are "The friendliest people you'll meet anywhere", and "Lao people are frank, open and friendly". And the list of generalities could continue: "Barbados – Just beyond your imagination", "Greenland – What a wonderful world". "Beyond words and imagination"? "What a beautiful place"? How many countries, regions, cities could be described by these slogans?

We should also mention "The heart of Europe". This slogan has been used by almost all European countries, regardless of their geographic location. It was especially popular after the change of regimes in the late 1980s and the early 1990s, when countries called "Eastern European" by the "West" tried to justify their values, historical roots, and European identity that way.

"Beyond words", a slogan formerly used by Greece, was another rather generalising term. This was later replaced by "Explore your senses". They changed their slogan again a few years ago. The current slogan, "All Time Classic", may be the best choice because it works in multiple ways. On the one hand, Greece has become one of the world's most popular destinations, a "classic" location for people going on holiday. On the other hand, the term "all time" also emphasises their rich ancient cultural and architectural heritage.

However, Anholt, the father of the term 'nation brand', points out that the influence of slogans and logos shall not be overestimated; he thinks that strategy and substance must come first, then the rest should follow (Anholt 2008). As we have seen in the examples above, the practice of place branding often works the other way around, unfortunately – if it does work as a brand strategy at all. Oftentimes, as the examples above show, logos and slogans are introduced without any idea about what they mean or what equity they are intended to build. In such cases, engagement is usually lacking, and visual identity is just something that goes in the corner of the page on stationary, business cards and flags; hence, the initiative is extremely limited in its effect.

At the same time, Anholt (2010) says that, if all government agencies (and maybe even some private and civil society actors) use the same design in their stationary and the way they present themselves, consistency can project a professional image. If local businesses, multinationals with provenance, diplomatic actors, cultural organisations, exporters, tourism businesses, promotion boards, government agencies and individuals consistently engage with the outside world referring to their origin with pride, it will raise awareness and may even have a slight impact on reputation. However, such support and momentum will not be achieved without a clear sense of what the brand is supposed to represent and propel. Although the expert primarily described entire branding programs in his writing, his findings are also valid for slogans that support positioning.

Methodology: a categorisation of country slogans

Given these considerations, it is worth examining what slogans countries use, and how they can be grouped together. It is important to stress the fact that these are tourism slogans – more specifically, the English versions of these slogans. Besides their tourism slogan, some countries actually have a specific slogan for attracting potential investors. However, in a certain sense, tourism slogans also influence investors. As Ries and Trout (1997. 134) say, "CEOs like to invest in countries where business trips amount to a vacation". Therefore, an analysis of tourism slogans is also the most relevant in this respect, considering that almost all countries have such slogans – however, as the analysis will show, there are some without a tourism slogan.

Our analysis covered 170 slogans in total. The main source for the examination was a map published in late 2016 by the British travel website FamilyBreakFinder ("Map Shows Every Country's Tourism Slogan"), which became known worldwide within a short time after being republished in high-reach media such as Reddit, The Guardian, Daily Mail, Lonely Planet, and even Pravda. In addition, a lot of users posted the map on their social media pages, therefore it could reach an even wider audience, also demonstrating that people are very interested in the topic. FamilyBreakFinder has modified and updated the map according to its readers' feedback, thus it is considered accurate, but in the course of our research we also checked each slogan by examining information on the websites of the countries' national tourism organisations and supplemented the list whenever it was needed.

As far as we know, this study is the first attempt to classify all these country slogans (170 examples in total) into groups. In this regard, we primarily focused on words appearing in slogans and the message conveyed by them. Therefore, we defined 11 + 1 groups in total – the latter category includes "others" that could not be listed in any of the 11 other groups. In addition to the 170 countries using slogans, we also found 26 countries without tourism slogans. Most of these are located in Africa or Asia, but one of them is a European country.

Data processing: individual slogan categories

Category 1: Slogans including the country name

One of the copywriting recommendations of Ogilvy, the emblematic figure of advertising, was to create a headline including the brand name in some form (Ogilvy 2001). He also used this in the case of tourist destinations: the most famous example was probably his campaign launched for Puerto Rico. "Pablo Casals is coming home to Puerto Rico" was a great success in 1957: tourist expenditures rose from $19 million to $53 million a year (Lui 2009). Bernbach, another legendary figure of the industry, used a similar method in the case of Jamaica. For example, one of his headlines said "People become Jamaica fans because of the beautiful sun, sea, beaches, flowers, hotels. And other reasons." In addition, these advertisements typically featured the name of the country in a large size, with unique logotype (Levenson 2002).

Arden, a former creative director of the Saatchi&Saatchi advertising agency, says that it is even better to include the brand name in the slogan or tagline than in the headline (2003). There are several well-known examples of this from the world of FMCG and other industries: "Come to Marlboro Country", "The Coke Side of Life", "A Guinness a day is good for you.", "If it's Madewell, it's well made", "Fly the friendly skies of United", "No FT, No comment", "Today, Tomorrow, Toyota", "Maybe she's born with it. Maybe it's Maybelline." and "There are some things money can't buy. For everything else, there's MasterCard."

Based on the examples above, we can agree that several countries use this combination and include the country name in the slogan. Moreover, 50 countries out of 170 chose this kind of a slogan, constituting by far the largest group. Therefore, we only highlight the most surprising or "unusual" phrases.

For example, "#spainindetail" is the only slogan that includes a hashtag. Using a hashtag is also a good idea because its primary function is to identify and

categorise interests and topics on social websites and networks, also facilitating research by keywords. Clicking on the subject, a compilation of messages including the specific subject appears: in this case, the subject is #spainindetail, and positive experiences related to Spain appear. The criteria of distinction and raising interest are clearly fulfilled, and the slogan with the term "detail" inspires people to get a deeper understanding of the country instead of shallow experiences. The latest "Smile! You are in Spain!" motto or the preceding "Bravo Spain", and possibly the most famous "Everything under the Sun" received criticism several times, suggesting that they were shallow and you could only associate them with sunshine and beaches, while "#spainindetail" refers to the fact that the country also comes with a rich offer of culture, music and gastronomy (backed up by marketing communications materials).

"Made in Italy", a slogan used by the other big Southern European country, Italy, symbolises the unique patriotic attitude of Italians; the Italian self-confidence, if you will. 'If it works in the fashion industry, why couldn't we use it for the whole country?', Italians may have asked.

The only European slogan that has not been translated into English is that of France. "Rendez-vous en France" (in English: Date in France) reflects the identity and pride of the French nation. It might as well prepare tourists to learn a few expressions in French if they want to chat with the local people or order a meal in a French restaurant.

The list of unique examples also includes Slovenia, the only country whose name incorporates the English word "love", which they never fail to emphasise with their slogan. "I feel sLOVEnia" has become a serious umbrella brand expanded to other areas beyond tourism, also presented by the freely available brand book of the country (see ukom.gov.si 2017).

St. Vincent and the Grenadines use their name in an abbreviated form. "Discover SVG" supports branding processes in a less creative way, although the focus of their efforts to convince tourists is probably visual communication in addition to beautiful photos, videos and other visual materials created in the Caribbean region. However, it is a question whether this three-letter abbreviation has become well-known, as most people driving SUVs are not aware of what the abbreviation stands for. In this case, why do the tourism experts of the country think that potential tourists can identify a completely unknown three-letter combination, such as SVG?

Australia implemented a comprehensive tourism campaign after the introduction of the "There is NOTHING like Australia" slogan, with a primary focus on Asian markets (India, China, South Korea). In their case, it must be emphasised that they (even as a separate continent) avoided the failure of "wanting to sell everything to everyone" and identified the three main fields in which they can excel globally. Tourism Australia's campaigns for young people were focused on water experiences, such as adventure travel and diving in a unique environment. Coastal experiences with world-class hospitality, programmes and excursion sites were offered to middle-aged people. A third category included culinary experiences, the Australian cuisine, which resulted in 1,600 different critiques, recommendations and reports on Australian restaurants in target markets (tourism.australia.com 2017). The slogan encompasses these three key areas, referring to diversity and uniqueness with the word NOTHING, suggesting that people who do not visit the country will miss things that they cannot make up for elsewhere. It is also true that if we do not know the background defined by the Australian government agency responsible for tourism, the word NOTHING tells us what it literally means: nothing.

The motto of Hungary, "Think Hungary – More than expected", also belongs to the group of slogans including the name of the country, and it was introduced in 2013. The related image film includes culture, architectural masterpieces, beautiful landscapes, medicinal waters, and a couple of culinary specialties – then, towards the end of the video, examples of Hungarian inventiveness and creativity, aimed at investors. An undoubtedly positive aspect of the slogan is that it overstepped the use of clichés such as "Discover" or "Beautiful", not to mention a slogan that was previously used by the country: "The heart of Europe". However, the term "more than" is one of the most overused phrases in marketing communications. Another disadvantage of the slogan "more than expected" is that it under-positions Hungary, suggesting that people planning a travel to Hungary do not expect much and have rather critical assumptions about the country.

Within this category, we may also form a subcategory including alliterative slogans. As Jeremy Hildreth says in his article "The joys and sorrows of logos and slogans in place branding" (2013), it is always beneficial if a slogan is musical and melodious. One of its forms is alliteration, with several examples among country slogans: "Brilliant Barbados", "Timeless Tuvalu", "Epic Estonia", and even "Remarkable Rwanda", which are more creative solutions than "Beautiful

Bangladesh". In the case of the slogan "Incredible !ndia", there is some extra wordplay: an exclamation mark (or a letter I upside down) is used instead of the initial of the country name. We may also find triple alliterations such as "Live Love Lebanon" and "Pristine Paradise Palau". In the case of all eight slogans mentioned above, alliteration may facilitate efforts to raise awareness, identification and imprinting. As musicality is involved, it may make slogans sound better.

Table 1: Slogans including the country name

Country	Slogan (original in English)
Armenia	Visit Armenia, it is beautiful
Australia	There is NOTHING like Australia
Bangladesh	Beautiful Bangladesh
Barbados	Brilliant Barbados
Bolivia	Bolivia awaits you
Brazil	Brasil – Sensational!
Burundi	Beautiful Burundi
China	China Like Never Before
Colombia	Colombia is magical realism
Costa Rica	Essential Costa Rica
Cuba	Autentica Cuba
Cyprus	Cyprus in your heart
Djibouti	Djibeauty
Ecuador	All you need is Ecuador
England	Discover your England
Estonia	Epic Estonia
Finland	I wish I was in Finland
France	Rendez-vous en France
Grenada	Pure Grenada
Hungary	Think Hungary, more than expected
Iceland	Inspired by Iceland
India	Incredible !ndia
Indonesia	Wonderful Indonesia
Ireland	Jump into Ireland
Italy	Made in Italy
Jordan	Yes, it's Jordan
Kenya	Magical Kenya
Lebanon	Live Love Lebanon
Luxembourg	Live your unexpected Luxembourg
Macedonia	Macedonia Timeless
Monaco	Easy going Monaco
New Zealand	100% Pure New Zealand

Country	Slogan (original in English)
Pakistan	It's beautiful, it's Pakistan
Palau	Pristine Paradise Palau
Panama	Panama surprises
Philippines	It's more fun in the Philippines
Russia	Reveal your own Russia
Rwanda	Remarkable Rwanda
San Marino	San Marino for All
Serbia	My Serbia
Slovakia	Travel in Slovakia – Good idea
Slovenia	I feel sLOVEnia
South Korea	Imagine your Korea
Spain	#spainindetail
St. Vincent and the Grenadines	Discover SVG
Thailand	Amazing Thailand: It begins with the people
Tunisia	I feel like Tunisia
Tuvalu	Timeless Tuvalu
Uruguay	Uruguay natural
Venezuela	Venezuela is your destination!

Source: Authors' own research

Category 2: The word "You" or "Your" is included in the slogan

Twenty-two countries of the 170 examined slogans integrate the word "You" or "Your" in some form, resulting in the second largest group. The popularity of this concept may be due to the idea that marketing is about the customer (in this case, about the potential tourist) above all. On the other hand, since there is no difference between the uses of the word "you" in formal and informal addressing in modern English, the use of this word in slogans addressing consumers is not as impolite as it would be in German. However, an adaptation dilemma occurs when an English slogan is translated into a language where the difference of using the equivalent of "You" (for example, "Du" and "Sie" in German) is an important question. Nevertheless, one of the advantages of using "You" and "Your" is that the consumer can be personally addressed with such slogans and, if applied correctly, they can mobilise people, acting like a battle cry.

One of the best examples in this group is "Beats to your rhythm", the slogan of Argentina. This represents that the slogan belongs to a dancing (tango), musical, passionate country which also provides the appropriate opportunities for people looking for a more relaxed vacation and other cultural programmes as Argentina is an adaptive country.

Following the same line of thought, Albania emphasises personal freedom. Their slogan "Go your own way" can be particularly attractive to tourists looking for unique experiences, supposing that it is not misunderstood: non-native English speakers may interpret the slogan as "Come here, do what you like, we do not pay much attention". This impression of a Balkan country that is unknown to many people is not very favourable.

Of course, this slogan category also includes more cliché-like solutions than unique and functioning concepts. "Your Singapore" or "Ours. Yours. Bahrain." do not really meet the criteria of good slogans. Slogans like "Iran – You are invited" or "Bolivia awaits you" do not activate tourists effectively: everyone is welcome in these countries, but they do not tell us why it would be worth going there, so these invitations may easily be left without an answer from tourists.

Table 2: Slogans including "You" or "Your"

Country	Slogan (original in English)
Albania	Go your own way
Argentina	Beats to your rhythm
Bahrain	Ours. Yours. Bahrain
Bolivia	Bolivia awaits you
Botswana	Our pride, your destination
Cyprus	Cyprus in your heart
Ecuador	All you need is Ecuador
England	Discover your England
Fiji	Where Happiness Finds You
Georgia	For the best moments of your life
Iran	You Are Invited
Luxembourg	Live your unexpected Luxembourg
Paraguay	You have to feel it
Poland	Move your imagination
Russia	Reveal your own Russia
Saint Kitts and Nevis	Follow your heart
Singapore	Your Singapore
South Korea	Imagine your Korea
Uganda	You're welcome
Ukraine	It's all about U
United States of America	All within your reach
Venezuela	Venezuela is your destination!

Source: Authors' own research

However, it is important to point out that slogans can be understood less as standalone items than as highlighted elements of the entire marketing communications concept. Our study did not examine the latter aspect; therefore, it is possible that the abovementioned slogans perform better as part of a specific concept.

Category 3: Slogans including the name of a larger geographical unit

The third most popular group of slogans consists of messages based on a larger geographical unit – 18 out of 170 countries use this concept. Emphasising the location may be particularly useful if it demonstrates the main strength of a specific country.

The case of Portugal is a good example: the slogan "Europe's West Coast" indicates the wide coastal line and the ocean, therefore people visiting the country are likely to be interested in it and link it with expected experiences (e.g. boat trips, coastal sunset, wildlife, seafood, etc.). The slogan of The Gambia, "The smiling coast of Africa", is also a good example: it combines the continent (Africa), the location (seaside) and the atmosphere (cheerfulness and hospitality). As the smallest country of Africa, they possess little competitive value, but they can stand out from the rest because of their beach and hospitality.

The Gambia is also an example of a smaller country trying to achieve a better position based on the reputation of a larger geographical unit. Two European mini-states, Andorra and Malta, also follow this concept. The former is "The Pyrenean Country", and the latter is "Truly Mediterranean". However, we can also find similar examples on other continents: Tonga is no other than "The true South Pacific", while Trinidad and Tobago is "The true Caribbean".

Interesting examples also include Tanzania, which is known less as a country and more for its wonderful natural sights. Therefore, they chose the somewhat long slogan "The land of Kilimanjaro, Zanzibar and the Serengeti" for good reason. It is interesting, however, that Madagascar, located not far from Tanzania, only describes itself as "A genuine island, a world apart". In their case, the slogan could also be "Madagascar – The way you saw it in the cartoon". Of course, such slogans usually cause outrage among locals as they fear that these degrade the country and narrow down what it offers, although everything that is bigger, better known and positive is worth being associated with.

Within the group, the use of the expression "heart" or "heart of" is common practice in destination marketing and, as such, can also be highlighted. According

to the slogans, Bosnia and Herzegovina is "The heart of SE Europe", Taiwan is "The heart of Asia", while Malawi is "The warm heart of Africa". With this practice, they do not only indicate their location, but also try to influence emotions, even if – as we have pointed out – "heart of (geographical unit)" is a kind of a cliché solution. Nowadays, Bosnia and Herzegovina also uses the slogan "The Heart-Shaped Land", which refers to the geographical shape of the country, similar to a heart with a slight (or rather big) exaggeration.

Table 3: Slogans including the name of a larger geographical unit

Country	Slogan (original in English)
Andorra	The Pyrenean Country
Bosnia and Herzegovina	The heart of SE Europe
Cameroon	All of Africa in one country
Chad	Oasis of the Sahel
The Gambia	The smiling coast of Africa
Guyana	South America Undiscovered
Kyrgyzstan	Oasis on the Great Silk Road
Madagascar	A genuine island, a world apart
Malaysia	Truly Asia
Malawi	The warm heart of Africa
Malta	Truly Mediterranean
Portugal	Europe's West Coast
Romania	Explore the Carpathian garden
Sri Lanka	Wonder of Asia
Taiwan	The heart of Asia
Tanzania	The land of Kilimanjaro, Zanzibar and the Serengeti
Tonga	The true South Pacific
Trinidad and Tobago	The true Caribbean

Source: Authors' own research

Category 4: Slogans including the terms "discover" or "discovery"

As we have mentioned in the introduction, one of the most overused phrases of tourism marketing is "discover", which we found in 15 slogans in some form.

Saudi Arabia stands out even among cliché solutions with its slogan "Experience to discover".

Of course, this group also includes good practices. For example, Guyana demonstrates how a country can communicate its obscurity in a positive manner. The territory of the state is mostly covered by forest and has only 770,000 inhabitants – it is not even a dominant player within South America. The country

name is derived from an Indigenous Amerindian language and means "the land of many waters", but its communication is not based on this because that would not point out their advantage: the untouched environment. Therefore, Guyanese people prefer to use the "South America undiscovered" slogan (with which they were also included in the previous category). Unlike neighbouring Venezuela, the majority of Guyanese natural treasures are still clean and untouched.

Special mention should be made of Japan's slogan. "Endless discovery" may sound very banal at first, but most visitors agree that one needs a lot of time to discover the natural and cultural treasures of the country – Japan offers an almost unlimited range of novelties, and people who have visited it at least once tend to return quite often.

Table 4: Slogans including the terms "discover" or "discovery"

Country	Slogan (original in English)
Bulgaria	A discovery to share
Canada	Keep exploring
England	Discover your England
Guyana	South America undiscovered
Japan	Endless discovery
Liechtenstein	Explore princely moments
Moldova	Discover the routes of life
Romania	Explore the Carpathian garden
Saudi Arabia	Experience to discover
Sierra Leone	The freedom to explore
Solomon Islands	Seek the unexplored
St. Vincent and the Grenadines	Discover SVG
United Arab Emirates	Discover all that's possible
Vanuatu	Discover what matters
Zambia	Let's explore

Source: Authors' own research

Category 5: Slogans using the words "beautiful" or "wonderful"

All countries are beautiful in their own way, or at least they all have natural values or artificial attractions that people are interested in. However, it is quite rare that a country is beautiful in its entirety, therefore it is surprising to find that highlighted in several cases (16 in total) as the main experience promised by the country. Of course they lose some of their originality as a result of that.

Laos and Saint Lucia actually use the same slogan, "Simply beautiful". Syria's motto "Always beautiful" is just heart-breaking if we consider what has

happened to the country: although it is historically beautiful, locals and potential tourists probably have a different view after the invasion of the Islamic State and the bombings that followed. Moreover, a significant part of cultural and historical monuments were destroyed, so even if the situation improves in the future, the tourist drawing power of the country will probably not be as strong as before.

Besides the word "beautiful", "wonder" also belongs to this category. Sri Lanka is no other than the "Wonder of Asia", Kazakhstan is "The land of wonders", and Cambodia is the "Kingdom of wonder". At the same time, these phrases may be less unique, and they do not necessarily mobilise the target group.

Djibouti and its slogan "Djibeauty" form a separate category: its advantage is distinction, but its disadvantage is that the witty wordplay only makes sense in English.

Table 5: Slogans using the words "beautiful" or "wonderful"

Country	Slogan (original in English)
Armenia	Visit Armenia, it is beautiful
Bangladesh	Beautiful Bangladesh
Cambodia	Kingdom of wonder
Djibouti	Djibeauty
Indonesia	Wonderful Indonesia
Kazakhstan	The land of wonders
Laos	Simply beautiful
Lithuania	Real is beautiful
Montenegro	Wild beauty
Oman	Beauty has an address
Pakistan	It's beautiful – it's Pakistan
Saint Lucia	Simply beautiful
Samoa	Beautiful Samoa
Sri Lanka	Wonder of Asia
Syria	Always beautiful
Zimbabwe	A world of wonders

Source: Authors' own research

Category 6: Slogans including the words "nature" or "natural"

Wonderful natural formations exist in several countries all around the world, but rather surprisingly the tourism slogans of only five countries highlight it with different levels of wittiness. The island of Dominica would like to own the combination "The nature island". Norway's slogan "Powered by nature" also refers to the nature of their primary sight, fjords: these formations have not been created by man, but by nature.

With its slogan "Get natural", Switzerland aims to target those who wish for "green" or "snowy" experiences. It is a relevant slogan as the majority of Swiss tourism (e.g. mountain biking, mountaineering, skiing, snowboarding) happens for the purposes of sports or recreation (hiking in the fresh air, Alpine excursions). Figuratively, the slogan may also refer to naturalness, a basic value in Switzerland.

In the case of Belize, "Mother Nature's Best Kept Secret" is an extremely exciting choice. The most precious treasure may also refer to Belize as a real tax haven, a well-known offshore location. The previous tourism slogan might have actually scared away the businessmen open to such ventures, as it said "A curious place". Well, this is not something that people wishing to "hide" their money want to hear. They would probably prefer "The best kept secret".

Table 6: Slogans including the words "nature" or "natural"

Country	Slogan (original in English)
Belize	Mother Nature's Best Kept Secret
Dominica	The nature island
Norway	Powered by nature
Switzerland	Get natural
Uruguay	Uruguay natural
Uzbekistan	Naturally irresistible!

Source: Authors' own research

Category 7: Slogans based on rich history

Several countries wish to make use of their rich history, as we have showed in the introduction through the example of Greece. Including that example, we found nine such cases in total. Mozambique invites tourists to "Come to where it all started". Egypt describes itself as the place "Where it all begins" (which is partially justified). Ethiopia also tries to suggest something similar by stating that it is the "Land of origins" (which is also partially true). And, of course, we can also mention Israel, "The Land of Creation" – although this slogan clearly supports Israel's modern, "start-up nation" positioning as well.

Peru suggests it is the "Land of the Incas", and Guatemala declares it is the "Heart of the Mayan World" – these slogans are based on the Indian culture and heritage. It is interesting that, in the latter case, they have also considered changing their country's name: instead of the slogan mentioned above, the country name "Guatemaya" could be an even more direct reference to the Maya heritage, and associations with the Spanish word mala (bad) could be avoided (see Papp-Váry 2017).

We may also consider countries using the adjective "timeless" as a separate subgroup: Macedonia, Tuvalu and Vietnam think that they are (and will continue to be) just as interesting, lovely and charming in the eyes of visitors as they were in the past.

Table 7: Slogans based on rich history

Country	Slogan (original in English)
Egypt	Where it all begins
Ethiopia	Land of origins
Greece	All time classic
Guatemala	Heart of the Mayan World
Israel	The Land of Creation
Macedonia	Macedonia Timeless
Peru	Land of the Incas
Tuvalu	Timeless Tuvalu
Vietnam	Timeless charm

Source: Authors' own research

Category 8: Slogans based on the word "happiness"

Coca-Cola's slogan was "Open Happiness" between 2009 and 2015. The notion was also used by some countries: the slogans of Bhutan, Aruba and Fiji include the word "happy" or "happiness".

Considering these examples, Bhutan's case is hardly surprising. Back in 1979, a former king of the country was the first to say "We do not believe in Gross National Product. (…) Gross National Happiness is more important." (Earthjournalism.net 2012)

The list of countries displaying happiness in their slogan includes a European state, Denmark. They describe themselves as the "Happiest place on Earth". They support this statement with studies, because they often achieve an excellent position in happiness reports (Business Insider 2017). It is another question that they owe this to their well-functioning state, advanced social system and welfare, which may not be the most important experience offered to tourists.

Table 8: Slogans based on the word "happiness"

Country	Slogan (original in English)
Aruba	One happy island
Bhutan	Happiness is a place
Denmark	Happiest place on Earth
Fiji	Where happiness finds you

Source: Authors' own research

Category 9: Slogans using the words "dream", "inspiration", or "imagination"

The "All within your reach" slogan of the United States of America may sound strange at first, considering the size of the country. However, the slogan may have another interpretation, which actually justifies the classic "American dream": this is the place where you can achieve everything and anything.

Qatar's "Where dreams come to life" slogan expressly refers to imagination and an almost fairy tale-like economy. Let us face it: the fact that they host the 2022 FIFA World Cup seems dreamlike in itself. Another strength of the slogan is that it belongs to mottos which do not only address tourists but also provide inspiration for investors, potential settlers and local citizens.

Germany is getting stronger in innovation, and their history has proved several times that they can undergo serious development. They probably refer to this in their slogan "Simply inspiring", which can be communicated effectively towards various target groups with minor modifications.

Table 9: Slogans using the words "dream", "inspiration", or "imagination"

Country	Slogan (original in English)
Dominican Republic	Dominican Republic has it all!
Germany	Simply inspiring
Korea	Imagine your Korea
Poland	Move your imagination
Qatar	Where dreams come to life
South Africa	Inspiring new ways
United States of America	All within your reach

Source: Authors' own research

Category 10: Slogans including the words "feel", "live", or "experience"

The primary aim of using the words "believe", "feel", "experience", and "live" is to wield some positive influence on emotions, but that effect has significantly decreased in the past decades as a result of frequent use. Having noticed this phenomenon, European countries are not using these words at the moment, but there are still some examples in South America and Africa.

Mexico tries to exert some influence using the words "live" and "believe" together in the slogan "Live it to believe it", but it does not say anything specific about the place and, in this example, almost any country could replace Mexico. Given the country's excellent conditions and natural and cultural sights, the use of a more concrete slogan could be considered.

Micronesia could also consider a more concrete slogan than "Experience the warmth" that could potentially result in higher activation of the target group (or at least referring to the character and uniqueness of the country). Although warmth can be translated into a sense that suggests the love that people feel, in the case of the slogan we cannot really be sure that recipients understand its secondary meaning.

In Bermuda we could feel love ("Feel the love"), and in Tajikistan we could feel friendship ("Feel the friendship"). Suriname is colourful ("A colourful experience"), Swaziland offers royal experiences ("A royal experience"), and we must experience Haiti (but what exactly?), or feel Paraguay ("Experience it", and "You have to feel it") – all in all, this group would probably win the cliché contest.

Table 10: Slogans including the words "feel", "live" or "experience"

Country	Slogan (original in English)
Bermuda	Feel the love
Haiti	Experience it
Lebanon	Live Love Lebanon
Luxembourg	Live your unexpected Luxembourg
Mexico	Live it to believe it
Micronesia	Experience the warmth
Paraguay	You have to feel it
Slovenia	I feel sLOVEnia
Suriname	A colourful experience
Swaziland	A royal experience
Tajikistan	Feel the friendship
Tunisia	I feel like Tunisia

Source: Authors' own research

Category 11: Slogans based on the word "life"

Croatia's "Full of life" slogan carries the promise of holidays and leisure experiences, although it is not a bad message for investors, either. The Maldives' slogan "The sunny side of life" also emphasises vacation, relaxation and good weather.

At the same time, it is quite hard to understand Georgia's slogan "For the best moments of your life" – it does not refer to the unique characteristics of the country and seems to be quite an overpromising slogan for tourists. The Moldovan slogan "Discover the routes of life" is a similar example: it includes messages of discovery and life, unless the country wants to refer to the fate of the area that

was troubled for centuries – Moldova was one of the European countries in the deepest economic crisis in the 1990s, with a GDP well below the CEE average. It is a real challenge for the country (wedged between Ukraine and Romania) to find its unique character that is also attractive to tourists.

Table 11: Slogans based on the word "life"

Country	Slogan (original in English)
Bahamas	Life Is Grand
Croatia	Full of life
Georgia	For the best moments of your life
Maldives	The sunny side of life
Moldova	Discover the routes of life
Qatar	Where dreams come to life

Source: Authors' own research

Category 12: Slogans that cannot be classified into any other groups

We have identified 31 out of 170 slogans that cannot be classified into any groups. In some way, this is a positive thing because it means that these countries managed to create something unique.

The Republic of Cape Verde and the country of Jamaica highlight relaxation. The motto of the former, "No stress", refers to the small number of happenings, which enables easy relaxation. In addition, their slogan is identical with the title of a popular song. Jamaica's "Get All Right" slogan may strengthen the easy, laidback image of the country: we almost hear Bob Marley's music. "The original cool", the original slogan of the Netherlands may have been created for the same reason, somewhat referring to the fact that it was the first European country where a stress-free, laid-back, cool outlook on life took the centre stage.

Other countries use other arguments. Kosovo's "History in the making" slogan may attract tourists as they can have a close-up view of how a country is being built, and it can also be a positive message for investors, showing them that they are opening up new vistas. East Timor's slogan, "Being First Has Its Rewards", was probably created for the same purpose.

The "Land of stories" slogan of the Czech Republic basically belongs to a marketing communications concept. As a result of the country's rich cultural and historical traditions, Czechs put special emphasis on "storytelling", therefore they created (well-articulated and sophisticated factual) stories not only about the country but also about domestic destinations and each attraction group.

Austria's "Arrive and revive" slogan has been translated into more than 20 languages, enabling accurate understanding. The "Arrive and revive" concept focuses on quality pastime. Its advertising spots highlight family and individual leisure time without gadgets, in the wonderful Austrian landscapes. The attraction of Austria's experience promise is very similar to that of Switzerland, therefore they try to distinguish themselves from Switzerland (and also from Germany) in their communication with good situational awareness.

Of course, we can also find questionable slogans besides positive examples. Algeria also goes against one of the golden rules: we do not know what marketer created its "Tourism for everybody" slogan, as there is an iron law that the target group cannot be "everybody". Chile fell into the same trap: "All are welcome" may look nice at an airport, but an advertisement including that slogan is not quite mobilising. The same can be said of the slogan of the Kiribati archipelago, which says "For travellers".

Honduras' slogan "Everything is here" also seems rather exaggerated. However, the slogan of nearby El Salvador is rather an underestimation. "The 45-minute country" scarcely makes the country attractive – it is doubtful that many people would want to travel to a country whose attractions can be viewed within 45 minutes.

Nigeria's government received harsh criticism when it introduced the "Good people, great nation" slogan. As Nigerian and international critics explained, you could scarcely change the image of a country with slogans and attractive colour combinations if its government members steal, manipulate election results, and sometimes bump off opposition members. In addition, the Internet further tainted the country's reputation, which had not been so bright anyway, with the 419 fraud, the action of online con artists promising wealth in return for the banking details of people falling for the scam in hopes of getting rich fast.

It is interesting that wordplays also appear in this category. Instead of "Much more", Morocco uses the slogan "Much Mor" referring to Moors. Belgium says it is simply "The place to Be".

Category 13: Countries without a slogan

Of course, there are countries which do not have a tourism slogan – at least for now. This group mostly includes African countries (Angola, Benin, Burkina Faso, Central African Republic, Democratic Republic of the Congo, Eritrea, Gabon, Ghana, Guinea, Ivory Coast, Liberia, Mali, Mauritania, Niger, Republic of the Congo, Senegal, South Sudan, Sudan, Togo, Western-Sahara, Yemen), and

Table 12: Slogans that cannot be classified

Country	Slogan (original in English)
Algeria	Tourism for everybody
Antigua and Barbuda	The beach is just the beginning
Austria	Arrive and revive
Belarus	Hospitality beyond borders
Belgium	The place to Be
Brunei	A kingdom of unexpected treasures
Cape Verde	No stress
Chile	All are welcome
Czech Republic	Land of stories
East Timor	Being First Has Its Rewards
El Salvador	The 45-minute country
Honduras	Everything is here
Jamaica	Get All Right
Kiribati	For travellers
Kosovo	History in the making
Latvia	Best enjoyed slowly
Lesotho	The kingdom in the sky
Mauritius	It's a pleasure
Mongolia	Go Nomadic
Morocco	Much Mor
Myanmar	Let the journey begin
Namibia	Endless horizons
Nepal	Once is not enough
The Netherlands	The original cool
Nicaragua	Unica. Original!
Nigeria	Good people, great nation
Papua New Guinea	A million different journeys
Scotland	A spirit of its own
Seychelles	Another world
Turkey	Be our guest!
United Kingdom	Home of amazing moments

Source: Authors' own research

the reason for the lack of a tourism slogan is probably the low level of tourism development and related communications activities. However, the group also includes three Asian countries, namely Afghanistan, Iraq and Turkmenistan (although Iraq's Kurdistan region has a tourism slogan, "The other Iraq".)

Rather surprisingly, there is also a European country that uses no slogan, namely Sweden. However, this is compensated for by well-known marketing communications

campaigns, for example "The Swedish Number", which allowed callers to get connected to a random Swede and talk about anything. Such engaging actions probably communicate the message of the country better than any kind of slogan.

Results: the frequency of each slogan type

Having presented the categories of the analysis, it is worth reviewing the most popular solutions. We have calculated the percentage ratio in light of the 170 slogans examined. As we have mentioned above, it is important to note that some slogans were included in multiple groups, for example Guyana's slogan "South America undiscovered". We also must not forget that, in addition to the 170 countries analysed in our study, 26 countries do not have a tourism slogan at all.

Table 13: The frequency of each slogan type

Slogan group	Frequency (number)	Proportion (in %, the percentage of 170 examined slogans)
Slogans that include the country name - including an alliteration	50 8	29.4% 4.7%
Slogans including the word "You" or "Your"	22	12.9%
Slogans including the name of a larger geographical unit	18	10.6%
Slogans including the word "beautiful" or "wonderful"	16	9.4%
Slogans including the term "discover"	15	8.8%
Slogans including the word "feel", "live" or "experience"	12	7.1%
Slogans based on rich history	9	5.3%
Slogans using the word "dream", "inspiration", or "imagination"	7	4.1%
Slogans based on the word "life"	6	3.5%
Slogans including the word "nature" or "natural"	6	3.5%
Slogans based on the word "happiness"	4	2.7%
Slogans that could not be classified	31	18.2%

Source: Authors' own research

On the whole, the category "finishing in the first place" was the group including the country name. The role of alliterations is to be highlighted even among these 50 slogans: its 8 occurrences mean that it surpasses four other categories in the table, therefore we may also consider it an individual group.

Slogans including the words "You" or "Your" also take a prominent place, with 22 occurrences: these countries try to address their consumers personally through their slogans.

More than 10% of the examined slogans position the country in connection with a larger geographical unit, mostly a continent or ocean. Somewhat cliché-like "discover" slogans make up 8.8%, and the ones including the words "beautiful" or "wonderful" amount to 9.4% of 170 slogans in total.

The share of slogans including the words "feel", "live" or "experience" is 7.1%, while that of slogans based on rich history is 5.3%.

The occurrence of slogans including the words "dream", "inspiration" or "imagination" is comparatively low, only 4.1%. The share of slogans including the words "life", "nature", "natural", "happiness", or "happy" is even smaller.

Slogans that could not be classified into any of the categories constitute a relatively large group, with a share of 18.2%. Just like all the other categories of the analysis, this one also includes both more creative and less original solutions.

Discussion: the role of consistency

Although finding a good slogan is a great treasure for a country and its tourism organisation, it is at least as important to use it consistently in terms of both geographical dimension and timespan. "(…) maintaining absolute control and conducting the same campaign in every country paid huge dividends. It was just like McDonalds – you are going to get the Big Mac", says Tourism New Zealand CEO George Hickton (see Pike 2007. 14). If we keep mentioning the slogan for years or decades, we may expect that, sooner or later, it will be imprinted – just like Nike's "Just do it". On the contrary, if we keep changing the slogan during each campaign, significant results are unlikely to be achieved.

However, frequent slogan changes are more common in the case of countries than in the case of classic brands. In the latter case, it is characteristic that, when a new head of marketing arrives, s/he wants to leave his/her mark by inventing a new slogan, logo and marketing communications concept. If the advertising agency is also replaced at the same time, the chances of creating a new slogan are even bigger. In the case of countries, changes of government, changes in the management of tourism organisations and certain political games may also be involved. The new leader is all the more motivated to show that s/he is better or different, with more creative ideas. For example, Steven examined the slogans of US states in 1982, 1993 and 2003 (see Pike 2007). According to his findings, only

6 out of 47 slogans used in 1982 remained valid until 1993, and only 13 out of 43 slogans examined in 1993 were still used in 2003.

Unfortunately, there is no comprehensive study on the earlier slogans of the 170+26 countries examined in this writing. Also, we must not forget that many of these countries were established in recent decades or years. It is enough to think of East Timor or South Sudan, but we may also mention the successor states of the Soviet Union or Yugoslavia as examples.

Yet the comparison is possible, even if it is not for the complete sample. Papp-Váry and Gyémánt (2009) provide 32 country slogan examples, and out of these, only nine remained unchanged over the past eight years. Furthermore, many countries have changed their slogans several times.

Of course, some of those changes are reasonable: for example, it was practical to find an English slogan to replace Argentina's Spanish slogan. Bhutan has probably become better known for its Gross National Happiness index than for being the "Land of the Thunder Dragon". Ethiopia's slogan "13 months of sunshine" hardly made any sense to tourists. The historical significance of Israel and the country's positioning as a start-up state is better reflected by the phrase "Land of creation" than the slogan "No one belongs here more than you". In the case of Estonia, "Positively transforming" is probably not valid any more as it is obvious that the country has completed its political and economic transition. At the same time, it seems a near miss that they did not connect the slogan to the well-known E-Estonia vision and mission, but were satisfied with the "Epic Estonia" alliteration.

The latter is also an example of new slogans including the country name: "Essential Costa Rica", "Incredible !ndia", "Magical Kenya", "Macedonia timeless", "#spainindetail", or "Think Hungary – More than expected". It seems that these countries took the advice of Ogilvy and Bernbach some decades later (Ogilvy 2001; Levenson 2002).

On the contrary, it is difficult to understand the changes of slogans in the following examples, which do not seem to be truly effective,: "Discover your England" instead of "Enjoy England", "Imagine your Korea" instead of "Korea sparkling", or "Move your imagination" instead of "Creative tension" in the case of Poland, unless their aim was to include the word "Your" in their slogans at all costs. It is also hard to understand why Norway replaced "Pure Escape" (praised in several case studies) with the slogan "Powered by nature". Cambodia's new choice, "Kingdom of wonder" instead of "World of treasures", does not appear to be justified, either.

Table 14: Countries that used the same slogan in 2009 and 2017

Country	Slogan in 2009	Unchanged slogan in 2017
Aruba	One happy island	One happy island
Bermuda	Feel the love	Feel the love
Brunei	The kingdom of unexpected treasures	The kingdom of unexpected treasures
Canada	Keep exploring	Keep exploring
Kosovo	History in the making	History in the making
Montenegro	Wild beauty	Wild beauty
New Zealand	100% Pure New Zealand	100% Pure New Zealand
Switzerland	Get natural	Get natural
Uruguay	Uruguay Natural	Uruguay Natural

Source: Authors' own research

Table 15: Countries that replaced their 2009 slogan

Country	Slogan in 2009	New slogan in 2017
Albania	A new Mediterranean love	Go your own way!
Argentina	Más de una rázon	Beats to your rhythm
Austria	At last	Arrive and revive
Bhutan	Land of the Thunder Dragon	Happiness is a place
Cambodia	World of treasures	Kingdom of wonder
Costa Rica	No artificial ingredients	Essential Costa Rica
Croatia	Mediterranean as it once was	Full of life
England	Enjoy England	Discover your England
Estonia	Positively transforming	Epic Estonia
Ethiopia	13 months of sunshine	Land of origins
Hungary	A Love for life, and Talent for entertaining	Think Hungary – More than expected
India	We add spice to your life	Incredible !ndia
Israel	No one belongs here more than you	Land of creation
Kenya	Experience a different safari every day	Magical Kenya
Korea	Korea sparkling	Imagine your Korea
Macedonia	Cradle of culture, land of nature	Macedonia timeless
Nicaragua	A water paradise	Unica. Original!
Nigeria	Heart of Africa	Good people, great nation
Norway	Pure escape	Powered by nature
Poland	Creative tension	Move your imagination
Romania	Come as tourist, leave as friend	Explore the Carpathian garden
Spain	Everything under the sun	#spainindetail
Tonga	The ancient kingdom of Tonga	The true South Pacific

Source: Authors' own research

Conclusion: A slogan is just the final step

To conclude, our study has shown how many solutions different countries use to create their slogans. Of course, as it turns out, they are not so many: the 170 examined slogans can be classified into 11 categories, and one so-called "other" category. Also, we must not forget that, in addition to the 170 countries with slogans, we found 26 countries without any central tourism slogan. This can be considered as the thirteenth category.

Our classification has summarised the most typical slogan variations: first of all, slogans featuring the name of the country (29.4%), solutions including the word You/Your (12.9%), and slogans positioning the country in connection with a larger geographical unit, for example a continent or an ocean (10.6%). We have also found out that "discover"-type slogans (8.8%) and slogans including the words "wonderful" or "beautiful" (9.4%) are still very popular. The five categories above are the most common, while six other categories using words such as life, nature, happiness, or referring to some emotion are identified in 2.7-7.1% of the cases. Slogans that cannot be classified into any of these categories constitute a comparatively large group, with a share of 18.2%. As in all other categories, we can also find more creative and less original solutions in the latter case.

The study has also explained that it is better to use a mediocre slogan in the long term than to introduce a new, current slogan each year because the latter solution makes consistent branding significantly more difficult. However, as we have found out in our examination of 32 country slogans, only 9 countries already used their slogan in 2009, and in 23 cases the slogan was replaced. As our analysis has pointed out, some of these changes could be justified, but in several cases the reasons for the change can be questioned.

Last but not least, it is important to note that a slogan is just the final step. The "product" itself plays a more important role in the attraction of tourists and slogans are also just one (although quite visible) element of marketing communications. Therefore, the influence of country slogans must be neither overestimated nor underestimated. A well-chosen slogan can be very useful in any case.

As we explained in the introductory chapter, the study can serve as a good basis for all professionals actively engaged in country branding. Cliché-like solutions and keywords may be filtered out by an overview of the world's country slogans, while good examples may provide help and inspiration. In addition, in

the chapters discussing the literature available on the topic, we also examined international and Hungarian specialised literature to highlight the characteristics and functions of good slogans.

However, the study does not provide an in-depth analysis of slogan effectiveness, although further empirical research on the topic could explain the effect of individual slogans on their target group. As a follow-up to our research, a possible question to analyse would be if slogans alone could actually raise interest in a country. That study could be conducted as a "blind test" surveying what countries people connect with individual slogans.

Weighing the functions of slogans may also be an exciting topic. What is the most important factor for their effect on inbound tourism? Is it their simplicity, attractiveness, adaptation to positioning, or easy-to-remember character?

The third exciting field recommended for research is examining the effect of the visual elements used in slogans. Is a slogan more functional if it is used together with a logo? What is the effect of typography? How does a photo accompanying a slogan affect the target group? The analysis of slogans may result in a series of exciting research projects in the future, providing tangible scientific results that are also applicable in practice.

References

Anholt, S. 2008. Place branding: Is it marketing, or isn't it? *Place Branding and Public Diplomacy* 4(1), 1–6.

Anholt, S. 2010. Definitions of place branding – Working towards a resolution. *Place Branding and Public Diplomacy* 6(1), 1–10.

Arden, P. 2003. *It's Not How Good You Are, It's How Good You Want to Be*. London: Phaidon Press.

Azambuja, D.–Pipoli, G. M. 2010. The importance of using slogans in country brand strategies when building country image. *Review of Management Innovation & Creativity* 3(8), 1–12.

Cook, R. A.–Hsu, K. H. C.–Taylor, L. L. 2019. *Tourism: The Business of Hospitality and Travel (6th Edition) (What's new in Culinary and Hospitality)*. USA: Pearson.

Dann, G. M. S. 2000. Differentiating Destinations in the Language of Tourism – Harmless Hype or Promotional Irresponsibility? *Tourism Recreation Research* 25(2), 63–75.

Denton Jr., R. E. 1980. The rhetorical functions of slogans: Classifications and characteristics. *Communication Quarterly* 28(2), 10–18.

Dinnie, K. 2012. More than tourism. The Challenges of Nation Branding in Asia. *Global Asia* 7(3), 13–17.

Dong, H. 2013. The linguistic constitute analysis of tourism destination branding slogans. Taking province and major excellent tourism cities as examples. *Human Geography* 28(2), 148–153.

Duarte, S. P.–Galvao, S. 2016. Do Brands "JUST DO IT"? Studying the Effectiveness of B2C Slogans. *The European Proceedings of Social & Behavioural Sciences EpSBS*. 3rd International Conference on Business and Economics, 21-23 September, 2016.

Dowling, G. R.–Kabanoff, B. 1996. Computer-aided content analysis: What do 240 advertising slogans have in common? *Marketing Letters* 7(1), 63–75.

earthjournalism.net 2012. *The story of a king, a poor country and a rich idea*. https://earthjournalism.net//stories/6468, downloaded: 13.12.2018.

FamilyBreakFinder 2016. *Map Shows Every Country's Tourism Slogan*. https://www.familybreakfinder.co.uk/holidays/map-every-countrys-tourism-slogan/, downloaded: 24.11.2016.

Fransen, M. L.–Fennis, B. M.–Pruyn, A. T. H. 2007. "Be All You Can Be": The Influence of Advertising Slogans on Regulatory Focus and Consumer Spending Behavior. *Advances in Consumer Research* 34, 206–207.

Gali, N.–Camprubí, R.–Donaira, J. A. 2016. Analysing tourism slogans in top tourism destinations. *Journal of Destination Marketing & Management* 6(3), 243–251.

Gaille, B. K. 2017. *The Perfect Slogan Formula: How to Write a Catchy Slogan that Brings in More Customers: An Easy Way to Make Memorable Business Slogans that Persuade People to Buy Your Product or Service.* New York: Amazon Digital Services LLC.

Healey, M. 2009. *Mi az a branding?* Budapest: Scolar Kiadó.

Hildreth, J. 2013. The Joys and Sorrows of Logos and Slogans in Place Branding. *Place Branding and Public Diplomacy* 9(4), 217–222.

Kohli, C.–Leuthesser, L.–Suri, R. 2007. Got slogan? Guidelines for creating effective slogans. *Business Horizons* 50(5), 415–422.

Kim, G.–Kakoyiannis, A. 2017. *Denmark's welfare policies help make it one of the world's happiest countries*. http://www.businessinsider.com/denmark-happiest-country-world-reasons-secret-dan-buettner-2017-11, downloaded: 08.12.2017.

Kotler, P.–Keller, K. L. 2006. *Marketingmenedzsment*. Budapest: Akadémiai Kiadó.

Richardson, J.–Cohen, J. 1993. State Slogans: The Case of the Missing USP. *Journal of Travel and Tourism Marketing* 2(2–3), 91–109.

Levenson, B. 1998. *Bill Bernbach's Book: A History of the Advertising that Changed the History of Advertising*. New York: Random House.

Li, T-y–Qu, Y. 2010. A research on the issues of the design of theme slogan for tourism destination positioning. An analysis from the perspective of brand element. *Human Geography* 25(3), 114–119.

Lui, N. 2009. *Ogilvy & Mather Worldwide 60th Anniversary*. http://designtaxi.com/article/100510/Ogilvy-Mather-Worldwide-60th-Anniversary/, downloaded: 21.12.2017.

Ogilvy, D. 2001. *Ogilvy a reklámról*. Budapest: Park Kiadó.

O'Guinn, T. C.–Allen, C. T.–Semenik, R. J. 2011. *Advertising and integrated brand promotion*. New York: SouthWestern Pub.

Papp-Váry, Á. F. 2007. *Országmárkázás – Hildreth és Walsh*. http://www.demos.hu/Sajto/Rolunk?&news_id=162&page=details&newsprint=I, downloaded: 10.01.2007.

Papp-Váry, Á. F. 2009. Országmárkázástól a versenyképes identitásig. *Marketing és Menedzsment* 43(2), 4–19.

Papp-Váry, Á. F. 2017. Cseréljük le az ország nevét? Guatemala és a többiek esete. In: Deli-Gray, Zs.–Árva, L. (eds.) *Turizmusmarketing esettanulmányok II.* Budapest: Akadémiai Kiadó, 98–106.

Papp-Váry, Á. F. 2013. *A márkanév ereje – Szempontok a sikeres brandépítéshez*. Pécs-Budapest: Dialóg-Campus Kiadó.

Pike, S. 2004. Destination brand positioning slogans – towards the development of a set of accountability criteria. *Acta Turistica* 16(2), 102–124.

Pryor, K.–Brodie, R. 1998. How advertising slogans can prime evaluations of brand extensions: further empirical results. *The Journal of Product and Brand Management* 7(6), 497–508.

Ries, L.–Ries, A. 2015. *Battlecry: Winning the battle for the mind with a slogan that kills*. New York: Ries' Pieces Publishing.

Ries, A.–Trout, J. 1997. *Pozicionálás – Harc a vevők fejében elfoglalt helyért.* Budapest: Bagolyvár Könyvkiadó.

Salem, L. 2012. *The Handbook of Slogans*. London: Crimson Publishing.

Sárközy, I. 2009. *Szlogenmeghatározások*. www.szlogenek.hu/szlogenmeghat.php, downloaded: 10.01.2017.

Supphellen, M.–Nygaardsvik, I. 2002. Testing Country Brand Slogans: Conceptual Development and Empirical Illustration of a Simple Normative Model. *Journal of Brand Management* 9(4/5), 385–395.

tourism.australia.com 2017. *News and information for Australian tourism businesses and international media*. http://www.tourism.australia.com/en, downloaded: 21.12.2017.

ukom.gov.si 2017. *Slovenia's Brand Book*. http://www.ukom.gov.si/fileadmin/ukom.gov.si/pageuploads/dokumenti/arhiv_projektov/IFS/Slovenias_Brand_brand_book.PDF, downloaded: 21.12. 2017.

Zuyun, Y. 2006. Analysis on the Linguistic Application of Tourism Slogan. *Journal of Huzhou Vocational and Technological College* 2006(3).

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Factors influencing the need of companies for IT specialists[1]

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The lack of trained IT specialists has become a significant problem for companies. Our research focuses on identifying the factors influencing the need of Hungarian companies for IT specialists. We have chosen this target group from the totality of companies because we could not identify a detailed database of self-employed entrepreneurs. The task of IT specialists is to develop and operate information systems. Hence, we have studied the topic from this perspective. However, many studies have demonstrated that the applied information system is dependent on company size. Thus, the goal of our research is to show the effect of company size, the applied information system and its mode of use on the company's need for IT specialists. Hypotheses have been set up and tested through empirical research. Based on the statistical analysis of the data sample, it has been established that the company size influences the type of the applied information system, the manner of application and the demand for IT specialists. The results also indicate the effect of ERP system usage. The type of IT services that are rendered does not influence the need for IT specialists.

Keywords: demand for IT specialists, ERP, cloud service.

JEL codes: C12, J23, O15.

Introduction

Information is one of the most important company resources. It is necessary for the creation and efficient operation of organisational processes and decision-making, maintaining relations with the business environment and influencing

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market participants. For our purposes, information is defined as the new knowledge resulting from the processing and interpretation of data, providing a way of reducing entropy (Nagyné–Gubán 2016).

The processing of the data is carried out by information systems developed and operated by IT specialists. Due to the changes in the market and the regulatory environment, the need for up-to-date information is continuously increasing, which enables fast and flexible adaptation. This need imposes the requirement to apply developed and efficient information systems, leading to an increased demand for IT specialists.

The current media, including traditional journals and the Internet, often report that the lack of IT specialists has risen to such a high level that it significantly threatens the functioning of the companies. The gravity of the situation is also reflected by the fact that the training of IT technicians and the teaching of IT subjects have become central issues. At the same time, it is also vitally important to get to know the needs of the businesses.

What kind of IT specialists and professional skills are needed? This is the main question of our present study, focused on interdependences between the information systems applied at the companies and their need for IT specialists. After reviewing the relevant scholarly literature, we will present our analysis based on empirical data collection, which included 98 companies who filled out our online questionnaire.

Literature review and theoretical framework

Information system, IT system, information technology (IT), information science

There are different interpretations in the literature regarding information systems, IT systems and information technology. These concepts are often used as synonyms. The IT system is the activity of collecting, managing, processing, storing and representing information using information technology (Badinszky 2011; Chikán 2008; Raffai 2003; Szepesné 2010). Regarding these theories, we find it problematic not only that they approach the concept of the information system from a single aspect, the technological side, but also that they use the concepts of data and information as synonyms. In a previous paper, based on the review of the relevant literature, we already demonstrated that these concepts were different (Nagyné–Gubán 2016).

According to a similar view (Budd 2011), information is the meaningful, interpreted and context-dependent data. Thus, we also believe that there is a difference between the definition of the information system and that of the IT system. On the one hand, *information system (IS)* refers to the organised ensemble of the transactions of the company, its environment and the interactions between them, the data describing them and the information activities and resources (hardware, software, manware/people and orgware/management processes). Similar definitions can be found in several studies (Bocij et al. 2003; Halassy 1996; Sziray–Gaul 2006; Kacsukné–Kiss 2007; Sasvári et al. 2014). On the other hand, the IT system is only a technical subsystem of the information system, encompassing the hardware and software components involved in data collection, storage and transfer.

There are also interpretations that use the concepts of information system architecture and technological architecture (Kadre 2011). The former refers to processes, data and staff, while the latter to hardware and software conditions. The concept of information technology (IT) appears to be synonymous with the IT system. National and international statistics, as well as some studies, also use the concept of information and communications technology (ICT) (Sasvári 2010; Badinszky 2011). Based on this interpretation, communication is a separate resource alongside software and hardware.

As for us, we share the opinion of the authors who consider communications technology to be part of information technology (Sziray–Gaul 2006; Bocij et al. 2003). The concepts of information science and information technology are often interpreted in the same way (Sziray–Gaul 2006; Hetyei 1999, 2001), i.e. as representing only the hardware and software resources of data and information processing. In other words, it is viewed as a technical aspect of the information system. The abbreviation 'IT' is also most often used in the sense of information science, e.g. in expressions such as 'IT applications' and 'IT management'. Thus, we will also use the concept of 'IT specialists', or 'IT professionals', according to this interpretation. Nevertheless, we consider the wider interpretation as appropriate, defining 'information science' as the science of producing, structuring and operating information systems (Szepesné 2010).

Classification of IT applications according to functions

The 'classification of information systems' is used in the literature to refer to the establishment of software categories. These are also called 'computer

applications' (Cser–Németh 2007) or 'IT applications' (Benkőné Deák et al. 2008). Software groups are defined according to functions. Table 1 summarizes the categories defined by the authors.

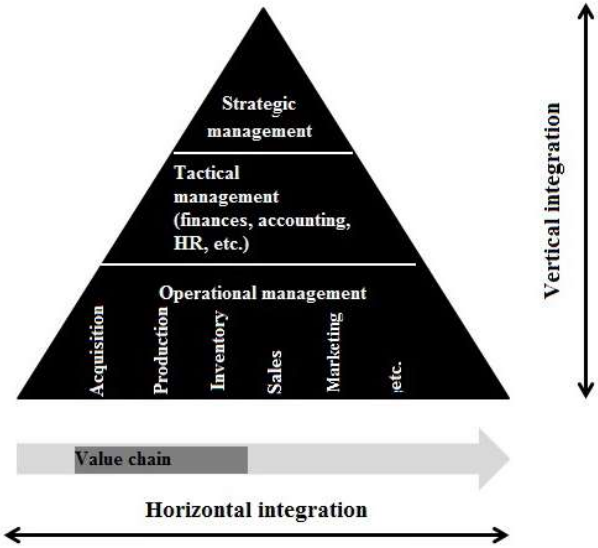
Table 1. IT applications

Name – abbreviated designation
Transaction Processing System – TPS
Online Transaction Processing – OLTP
Office Automation Systems – OAS
Workflow System – WS
Data Warehouse – DW
Customer Relationship Management – CRM
Supply Chain Management – SCM
Supplier Relationship Management – SRM
Expert System – ES
Group Support Systems – GSS
Knowledge (Management) System – KWS (KMS)
Enterprise Performance Management – EPM
Production Planning and Scheduling – PPS
Material Requirements Planning – MRPI
Material Requirements Planning – MRPII
Geographic Information Systems – GIS
Computer Integrated Manufacturing – CIM – Computer-Aided Design – CAD – Computer-Aided Engineering – CAE – Computer-Aided Production Planning – CAP – Computer-Aided Manufacturing – CAM – Computer-Aided Quality Assurance – CAQ
Management Information System – MIS, VIR
Executive Information System – EIS
(Group) Decision Support System – (G)DSS
Online Analytical Processing – OLAP
Business Intelligence – BI
Enterprise Resource Planning – ERP
Total Enterprise Integration – ERP II.
Integrated Enterprise Application – IEA

Source: Own compilation based on Koloszár (2013)

In this paper, we will use the categories of IT applications from Table 1 to evaluate the information systems of the companies. However, we have filtered out the overlapping designations, and we have established function groups as well.

The emergence of integrated systems brought about a qualitative leap in the field of IT applications. ERP systems are known in the literature as integrated management systems (Giller 2014) or integrated company management information systems (Hetyei 1999). These are used for the uniform treatment of transactions, resource planning and the service of the corresponding executive levels. ERP systems characteristically treat all enterprise processes and functions uniformly, in a modular system and using a common database, while being customisable and configurable. Special processes and requirements are only possible through the further development of the software package. The integration emerging in ERP systems is illustrated in Figure 1.



Source: Own compilation based on Nicolescu et al. (2007)

Figure 1: Integration through ERP systems

However, both in practice and in some segments of the literature, software not covering the entire field of integration is also referred to as ERPs (Kadre 2011; Cser–Németh 2007). We have also dealt with the interpretation of integrated systems in our research.

Several authors confirmed the link between company size and the employed information system (Sasvári et al. 2014; Koloszár 2009). This finding was

accepted in our research as well and, so, we considered the classification based on the number of employees as a variable in our analysis of the need for IT specialists.

Opportunities for enterprises regarding the development of information systems

During the development of information systems, companies have to decide how to provide the software necessary for data processing.

The potential sources of IT applications are the following (Komló 2013):

– Own development. The system is developed in-house by the company's own specialists, based on the specific requirements of the enterprise.

– Development by an IT company. In this solution, the framework system of the software developer company is remodelled according to the special needs of the enterprise.

– Ready-made software packages provided by IT companies, so-called 'canned' systems, i.e. systems developed for standard processes on the basis of model companies. Theoretically, these are customisable as well, but this need is limited in practice. Vice versa, the business processes are more often adapted to the software.

– Outsourcing, when an IT company offers hardware and/or software services for operating the information system of another enterprise. In the case of complete outsourcing, the recipient of the service only records the data. The service provider ensures the processing, the necessary hardware, software and manware resources, and provides outputs. On a lower level, the recipient leases the infrastructure, i.e. the IT resources (hardware, network and professionals) running its own application. There is also the option of only requiring the software from the service provider if the enterprise already has the necessary infrastructure.

IT services are available through 'cloud computing' via the Internet. There are three different levels (Repschläger–Zarnekow 2011):

1. Infrastructure – Infrastructure as a Service (IaaS). Providing hardware elements, e.g. virtual machines, storage space and network.

2. Development environment – Platform as a Service (PaaS). Providing hardware elements, e.g. database management systems and development software.

3. Providing data processing (application) software – Software as a Service (SaaS).

The higher (2nd and 3rd) levels also contain the service elements provided by the lower level.

The assessment of cloud services varies in the scholarly literature. Generally, the accepted view is that the investment demand for developing IT is lower, operating costs are reduced and the rendered services are scalable and customisable to the company (Szabó et al. 2013; Repschläger–Zarnekow 2011; Komló 2013). At the same time, safety and availability are only mentioned as an advantage by a few authors. Furthermore, there are some papers mentioning this as a safety risk, since company data are stored by the service provider (Komló 2013; Szabó et al. 2013). The dependence on the supplier, inadequate legislation and slow access may also mean disadvantages. However, the cloud service may also present great future potential for SMEs.

Due to the different assessments, we have also dealt in our research with the valuation of cloud computing and its use on the various levels by the companies.

IT job profiles according to the recommendation of the EU framework and to Hungarian entrepreneurial needs

In 2012-2013, the European Commission developed a unified nomenclature, the European e-Competence Framework 3.0 (abbreviated as e-CF 3.0), for IT job profiles. This framework, accepted by 120 stakeholders, contained an ICT profile system encompassing 23 job descriptions, classified into six groups. The list was supplemented in 2018 and, now, there are 30 job profiles listed under seven categories (Breyer 2018).

However, domestic technical literature does not follow the standard categorisation according to ICT job profiles. Szabó (2013) also draws on a markedly narrower categorisation in his study surveying the needs of domestic enterprises for IT professionals: administrator; operator; developer; manager; engineer; consultant; expert, key user, specialist; analyst; system administrator; customer support, help desk, customer service; technician; tester; architect.

In our research, we have classified specialists into two main categories, i.e. system developers and system operators, subsequently establishing job description groups within these categories.

Table 2. European ICT Profiles

Families	ICT Profiles
Process Improvement	Digital Transformation Leader
	Product Owner
	Scrum Master
	DevOps Expert
Business	Business Information Manager
	Chief Information Officer
	ICT Operations Manager
	Data Scientist
Technical	Quality Assurance Manager
	Cyber Security Manager
	Project Manager
	Service Manager
	Data Specialist
Design	Business Analyst
	Systems Analyst
	Enterprise Architect
	Systems Architect
	Solution Designer
Development	Developer
	Digital Media Specialist
	Test Specialist
Service & Operation	Data Administrator
	Systems Administrator
	Network Specialist
	Technical Specialist
	Service Support
Support	Account Manager
	Digital Educator
	Cyber Security Specialist
	Digital Consultant

Source: Own compilation based on Breyer (2018)

Research objective and research hypotheses

The objective of our research is to present the factors influencing the need of companies for IT specialists. We studied this topic from the perspective of the information system. After the literature review, hypotheses were established according to Table 3.

Table 3. Hypotheses

Hypothesis number	Content of the hypothesis
1.	We assume that company size influences the usage of ERP systems.
2.	We assume that ERP systems do not fully integrate horizontal and vertical functions and levels.
3.	We assume that company size influences the usage of the IT application.
4.	We assume that company size determines whether an IT specialist is needed.
5.	We assume that the recourse to IT services influences the need for IT specialists.
6.	We assume that the spread of cloud-based technologies is slowed down by the incomplete knowledge of the companies regarding this IT service.

Source: Own compilation

In order to verify these hypotheses, we collected data regarding Hungarian partnerships and then evaluated the results based on quantitative analysis. Through quantitative analysis, we ascertain causal relationships based on measurable data, subsequently generalising them to the basic population (Sajtos–Mitev 2007).

Methodology

Data collection

Our empirical research, conducted between 1 September 2017 and 28 February 2018, was directed at the evaluation of Hungarian companies. We chose that target group from the totality of companies because we could not identify a detailed database of self-employed entrepreneurs. The sampling was based on the EMIS (Emerging Markets Information Service) database, containing the data of 63 433 partnerships.

According to the data of the Hungarian Central Statistical Office (Központi Statisztikai Hivatal, abbreviated as KSH), by 31 December 2016, there were 540 585 partnerships in Hungary, with 516 743 of them functioning as of 1 January 2017 on a nationwide level. The EMIS database contains the data of 55 644 functional partnerships.

In order to draw reliable conclusions, sample selection must be random. Thus, each element has the same chance of being selected (Babbie 2013). In quantitative data collection, a large sample and random sampling are necessary for statistical analyses and generalizability (Horváth–Mitev 2015).

Due to the large-scale sampling, a questionnaire survey was used for data collection. In order to accelerate our sampling, we used an online self-administered questionnaire, designed as a Google Form. One of the great advantages of this solution is that the series of questions may be directed according to the provided responses, thus making the self-administration of the questionnaire more efficient. However, the disadvantage lies in the very low response rate, which can be increased through repeated requests. Additionally, the wrong interpretation of the questionnaire by the respondents may result in inaccurate, incomplete or uninterpretable responses. Hence, the key element of questionnaire-based data collection consists in constructing the questionnaire itself, as, after completion of the survey, there is no possibility to correct the mistakes of the questionnaire or to make up for missed questions (Kovács 2013). This is why it is important for questionnaire construction to be preceded by literature review, as presented in the previous chapter.

Mistakes are possible even under the conditions of the most careful questionnaire construction. There can be ambiguous questions and inadequate transitions between the questions. In order to eliminate these lapses, a trial survey should be conducted (Babbie 2013). Hence, before starting our online data collection, we conducted trial surveys with familiar businesses and specialists. On the basis of their feedback, mistakes were corrected in newer versions of the questionnaire in order to eliminate interpretive and structural problems. After getting the final version, we had to select the companies to be included in the sample. The size of the sample necessary for providing reliable justification of research hypotheses is dependent on the methods used to verify the hypotheses and the different assumptions about the multitude (e.g. the normal distribution of the multitude).

Our goal was to reach 100 completed questionnaires. As the questionnaires were to be sent out online, we expected a 10% response rate. Hence, we had to select a sample of 1000 elements to achieve our objective of 100 completed survey questionnaires. We tried to reach representativeness in our sample selection. According to Babbie (2013), a sample is representative of the population if its aggregated characteristics approximate the same aggregated characteristics of the population. In our research, we studied the effects of company size as a variable from multiple perspectives. Therefore, in our selection of sample items, for the sake of representativity, we considered it appropriate to distribute company groups according to employee number.

The classification of micro-, small and medium-sized enterprises (henceforth: SMEs) according to the number of employees and annual turnover is defined in the Hungarian Act XXXIV of 2004. According to this interpretation:

– A micro-company is defined as an enterprise in which the total number of employees is less than 10, and the annual net turnover or balance sheet total does not exceed the equivalent of EUR 2 million.

– A small company is defined as an enterprise in which the total number of employees is between 10 and 49, and the annual net turnover or balance sheet total is at least the equivalent of EUR 2 million, but it does not exceed the equivalent of EUR 10 million.

– A medium company is defined as an enterprise in which the total number of employees is between 50 and 249, and the annual net turnover or balance sheet total is at least the equivalent of EUR 10 million, but it does not exceed the equivalent of EUR 50 million.

We used the KSH database for the representative selection of our sample. Data collection began in 2017. Thus, our research was based on the distribution available at the end of 2016. The KSH database further divides SMEs into groups of companies with 10-19 and 20-49 employees. We pooled the two groups according to Act XXXIV of 2004.

Since the characteristics of the companies may differ according to their specific profiles, the sampling was carried out based on the distribution of the included partnerships according to counties and regions. The KSH database does not have a breakdown by territory and staff count separately for partnership companies, as its data refer collectively to all companies. Therefore, in our sampling, we weighted the territorial (counties and regions) data on partnerships available on 31 December 2016, with their distribution according to size.

The EMIS database provided the opportunity to filter functional partnerships according to the number of workers and county. The elements of the sample for data collection were chosen from these subpopulations on the basis of random numbers generated with an Excel formula. The questionnaires were sent out via e-mails containing the link and requesting individual completion from the companies.

Due to the shortcomings of the form-generating software, we could not determine unique identifiers for the online forms. This may create a problem, since it prevents us from automatically identifying repeated completions of our

form. This difficulty can be overcome if the respondent self-identifies using the company data. On the other hand, however, this can lead to a decrease in the response rate. Hence, we handled the issue through the phased sending of the questionnaire. One hundred invitation e-mails were sent biweekly. The low response rate – around 7% in our first round – made it possible to check the questionnaire replies received from the companies and to introduce the data into the SPSS software. Experience has shown that replies usually arrive in about 1 to 5 days after the sending out of the invitation e-mail. The two-week interval thus allowed for resending the questionnaire in order to increase the response rate.

Resending could be filtered simply through colour-coding. In our chosen sample, we highlighted the companies which had already received the invitation twice with green and those which had received it only once were yellow-coded, while those to be invited to participate were marked with red. In approximately six months, we were able to introduce data from 98 completed questionnaires into the SPSS software. Data analysis could thus begin.

Methods of data analysis

The collected data were analysed with the SPSS software. According to Fliszár–Bollók (2014), a frequent issue with this method is the low, nominal or ordinal scale measurement level of the variables. Often, there are no variables available that are measured on the ratio or interval scale. Thus, parametric tests cannot be applied to the analysis. In our view, measurement levels are not determined by the data collection method, but by the research objective. In our study area, we applied ordinal scale variables. Hence, we had the possibility to principally apply non-parametric statistical methods from the catalogue of statistical analyses. Additionally, we also used binary-coded (0,1) dummy variables that can be interpreted as dichotomous variables (Hastie et al. 2009).

The literature contains opposite interpretations of the scale classification of dichotomous variables. Although dichotomous variables are nominal variables, there are some authors who argue that they can also be regarded as orderly, ordinary variables whose frequency is that of a non-normal distribution. In fact, they believe that, for certain purposes, dichotomous variables can also be treated as if they were of scale value (Morgan et al. 2013). This interpretation can be found in several authors who treat dichotomous variables as simultaneously nominal, ordinal and interval-ratio variables. In our view, dummy variables are nominal variables.

We used cross tabulation analysis for examining the validity of our hypotheses, showing the interrelation and associative relationship between ordinal and nominal variables. The minimum requirement in SPSS for the cross tabulation prepared on the basis of the two criteria is that the number of cells in which the expected frequency is lower than 5 cannot exceed 20%. Our investigations have met this condition, so the tests performed are interpretable. The SPSS software allows for calculating several indicators to analyse the relationship between the variables. Pearson's chi-square statistics show whether there is a significant association between the variables (Fliszár–Bollók 2014). According to the null hypothesis (H_0), the variables are independent: there is no associative relationship between them. If the level of significance does not exceed 5%, i.e. the Asymptotic Significance value (AS) <= 0.05, then the null hypothesis must be rejected, as there is a significant relationship between the variables. The strength of the association is measured by the Cramér's V coefficient (on a scale of 0 to 1). The closer the indicator value is to 1, the closer the relationship between the variables. The lambda index measures the extent to which the independent variable is capable of predicting the dependent variable, expressed as a percentage (Sajtos–Mitev 2007). The adjusted residual (AR) value that is calculated in the cross tabulation analysis also shows the attraction and the repulsion between variables. If the AR is greater than or equal to 2, the variables attract each other. If it is less than minus 2, there is repulsion between them.

Our research form included questions for which the companies could rate how much they agreed with the statement on a Likert scale of 1 (complete disagreement) to 5 (complete agreement). The higher score means a more favourable and positive attitude. Hence, negative statements have to be re-coded in order to attain a consistent interpretation. The construction of the Likert scale is dependent on the condition that it has to consist of several related items for the same objective or topic (Carifio–Perla 2007). Thus, we formulated eight interrelated assertions regarding a topic, i.e. the cloud services, to be evaluated by the respondents.

Non-parametric tests are used for the statistical analysis of the Likert scale as an ordinal scale. Kendall's tau-b rank correlation coefficient can be used for the analysis of the connections between data on the rank scale (Csíkos 1999). This indicator provides the means for analysing the attitude of the companies

included in our sample toward the statements. Instead of Likert values, we used rank numbers for calculating the statistical values. Kendall's index of rank concordance is used for comparing the concordances of several rankings.

According to some views, the Likert scale may also be interpreted as the highest level of measurement if, instead of scale values, averages are applied to the analysis. In the interpretation of Morgan et al. (2013), the frequency of the Likert scale is that of an approximately normal distribution, so it shall be considered a metric scale. This enables us to conduct an analysis of variance (ANOVA) in order to establish whether there is a difference between the averages of two or more groups. Thus, we analyse the effect of one or more independent variables on one or more dependent variables. The condition is that independent variables should be nominal and categorised variables and that dependent variables should be metric (Sajtos–Mitev 2007).

Data processing and results

Sample selection

We received 98 completed questionnaires. As a first step in their processing, we identified the errors and inaccuracies in the responses by analysing the relations between the questions. The objective of representative sampling was not achieved, as the distribution of the companies which filled out the questionnaire survey differed from the distribution of the population, as shown in Table 4.

Table 4. The number and distribution of registered partnership companies according to staff number categories in the Hungarian population (KSH) and in the sample

Staff number categories (persons)	In the population on 31 December 2016		In the sample
	Number of employees (persons)	Distribution (%)	Distribution (%)
0–9	505 679	93.5	40.8
10–19	18 943	3.5	
20–49	10 141	1.9	
10–49	***29 084***	***5.4***	***18.4***
50–249	4 899	0.9	18.4
250 and above	923	0.2	22.4
Total	**540 585**	**100.0**	**100.0**

Source: Own compilation

The analysis of the territorial and company profile-based distribution of completed questionnaires reveals that the majority of respondents were from the Western Transdanubia (Nyugat-Dunántúl) region of Hungary (55%) and from Budapest (29%), representing all sectors of the national economy.

Although the representativeness requirement was not met, statistical analyses and conclusions are possible on the basis of sample size and element selection. The sample used to verify our hypotheses, consisting of 98 elements, counts as large.

Results

Hypothesis 1 assumes that company size influences the usage of ERP systems. We used a cross tabulation analysis to examine this relationship. The null hypothesis (H_0) states that there is no link between the two variables. Pearson's chi-square statistics show that the null hypothesis has to be rejected, as the calculated significance value = 0.00. Hence, it does not reach a significance level of 0.05, which is to say that there is a significant connection between company size and ERP usage. Cramér's V Index reflects an associative link of moderate strength between company size and ERP usage (0.574). Thus, our hypothesis is accepted.

Based on the measure of association lambda, if the company size is known, in 48.9% of the cases it can be predicted whether it uses an ERP system.

Micro-enterprises characteristically do not use ERP – the variables specifically attract each other, as indicated by the adjusted residual = 4.4. If the value is above 2, then there is attraction, and if it is below -2, there is repulsion between the variables. It can be established that medium-sized and large enterprises characteristically use ERP systems (Table 5). On the basis of our sample, there is no significant attraction or repulsion between the two variables for small enterprises.

These findings may seem obvious, since it is generally accepted that the smallest companies, i.e. micro-enterprises, do not even use business software. The usage of integrated systems is thus even rarer. However, a somewhat deeper analysis may provide us with a more interesting result. According to the responses to our questionnaire (40 companies), 30% of micro-enterprises (40 companies) are actually also using an ERP system. The micro-enterprises which do not use integrated corporate governance systems (Enterprise Resource Planning, ERP) have mentioned their small company size as a reason for that. Nevertheless, these companies are also using (or planning to introduce) business software (about

Table 5. Company size according to staff number * ERP presence cross tabulation

Company size according to staff number	ERP presence		
	No	Yes	Total
Micro-enterprise item number	29	11	40
ERP frequency %	64.4%	20.8%	40.8%
Adjusted residual	4.4	-4.4	
Small enterprise item number	11	7	18
ERP frequency %	24.4%	13.2%	18.4%
Adjusted residual	1.4	-1.4	
Medium enterprise item number	4	14	18
ERP frequency %	8.9%	26.4%	18.4%
Adjusted residual	-2.2	2.2	
Large enterprise item number	1	21	22
ERP frequency %	2.2%	39.6%	22.4%
Adjusted residual	-4.4	4.4	
Total	45	53	98
ERP total %	100.0%	100.0%	100.0%

Source: Own research

90%) and office software packages (about 60%), as well as, to a smaller extent (about 30%), SCM and CRM systems, internal networks and database management software. At this level, the least used software are virtual assistant and expert systems. One can note a marked improvement when comparing these results with Sasvári (2013). At the time of that previous study, the usage of ERP systems was not at all characteristic of micro-enterprises. Furthermore, the usage rate was much lower for business (34%) and office (40%) software packages.

Hypothesis 2 assumes that ERP systems do not fully integrate horizontal and vertical functions and levels. 70.6% of the 51 companies using integrated corporate governance systems also use other software, alongside the ERP system.

Thus, our hypothesis is accepted. Specialised software is used in the area of payroll and human resource management. Additionally, one can also find individual systems supporting the demand-planning, production and service activities of the companies. Since ERP systems are based on the enterprise-specific model, they cover the general functions. However, every enterprise has activities and data that are specific to it. On the basis of our sample, we have come to the conclusion that companies overwhelmingly request IT companies to build their needs into the ERP systems. Nevertheless, they may also choose to

ask their own IT technicians to build specialised programmes to be used alongside the integrated system. This alternative was found in 25% of the companies.

Hypothesis 3 assumes that company size influences the usage of the IT application. The null hypothesis (H_0) states that there is no link between the two variables. We calculated chi-square statistics in our cross-tabulation analysis. The calculated significance value was 0.041, which is lower than the established 0.05 level. Thus, we must reject the null hypothesis, i.e. there is a significant relationship between company size and the usage of IT applications.

Based on the analysis which looks at the strength of the relationship between the two variables, it can be stated that there is a weak to medium association, as shown by the Cramér's V value (0.263). Thus, our hypothesis is accepted.

The analysis of cross tabulation frequencies (Table 6) reveals that the implementation of 'canned' systems and self-developed software is rather characteristic of micro-enterprises, and the integration of specific company needs into the framework systems is becoming increasingly important with the growth in company size. In the case of micro-enterprises, software development by IT companies incorporating the client company's needs is completely uncharacteristic. That is to say, the variables specifically repel each other, as shown by the value of the adjusted residual = -2.2. This development mode is specifically a characteristic of large enterprises, i.e. the variables specifically attract each other. We have come to this conclusion based on the adjusted residual value = 2.5. On the basis of our sample, there is no significant attraction or repulsion in the case of small and medium enterprises.

Hypothesis 4 assumes that company size determines whether an IT specialist is needed. In order to explore the relationship, a cross tabulation analysis can be used here as well. The null hypothesis (H_0) states that there is no link between the two variables. According to Pearson's chi-square statistics, the null hypothesis must be rejected, because the calculated significance value of 0.00 is lower than the acceptable level of 0.05. Hence, there is a significant relationship between company size and the need for IT specialists. Thus, our hypothesis is accepted.

According to the adjusted residual value (-4.6) calculated in the cross tabulation frequency analysis, the need for IT specialists and the micro-entrepreneurial size specifically repel each other, while there is explicit attraction for the large company size, where the adjusted residual value is 5.0. On the basis of our sample, there is no significant attraction or repulsion in the case of small and medium enterprises.

Table 6. Company size according to staff number * IT system development cross tabulation

Company size according to staff number	IT system development			
	Own (in-house) development	Development by an IT company incorporating the client company's needs	Implementing 'canned' software of the IT company	Total
Micro-enterprise item number	11	10	16	37
% Size based on staff number	29.8%	27.0%	43.2%	100.0%
Adjusted residual	0.6	-2.2	1.8	
Small enterprise item number	8	6	4	18
% Size based on staff number	44.4%	33.3%	22.3%	100.0%
Adjusted residual	1.9	0.7	1.0	
Medium enterprise item number	2	9	7	18
% Size based on staff number	11.1%	50.0%	38.9%	100.0%
Adjusted residual	-1.6	0.9	0.6	
Large enterprise item number	4	14	4	22
% Size based on staff number	18.2%	63.6%	18.2%	100.0%
Adjusted residual	-1.0	2.5	-1.6	
Total	25	39	31	95
Total % Size based on staff number	26.3%	41.1%	32.6%	100.0%

Source: Own research

However, if we want to answer the question whether company size determines the needed expert groups – system developers or operators, or even both –, it can be established that the significance value of Pearson's chi-square statistics, as calculated via cross tabulation analysis, is 0.465, which exceeds the allowed 0.05 level. The null hypothesis, i.e. the independence of the variables must therefore be accepted. *We may thus conclude that a micro-enterprise can have the same need for IT developers and operators as a large enterprise.*

As part of our research, we also sought to answer the question regarding the possible relationship between the usage of an ERP system and the need for an IT specialist. It may be stated as self-evident that the more complex the IT system applied at the company, the greater the need for IT specialists. The associative relationship of medium strength between the usage of ERP systems and the need for IT technicians can also be demonstrated through cross tabulation analysis. Furthermore, Cochran-Mantel-Haenszel statistics may also be applied to examine

the relationship between two dichotomous variables (Fliszár–Bollók 2014). The index reflects a significant relationship. Our calculated significance value is 0.00, which is lower than the allowed 0.05 level. Thus, the null hypothesis must be rejected.

However, companies may satisfy their need for IT specialists not only through staff recruitment but also by using the services offered by IT companies. The emergence of cloud services allows for bridging inequalities as well. In the next part, our investigation will extend to the way in which the IT services used influence the need for IT technicians.

First, it is worth considering whether company size influences the form of the acquired services.

The cross tabulation analysis reveals that it is not significantly dependent on company size whether the companies make use of IT or cloud services, and if so, of what type. The significance value of Pearson's chi-square is 0.085 for the relationship between company size and the IT services used, which exceeds the 0.05 level. Hence, we have to accept the null hypothesis, the independence of the variables.

On the basis of the breakdown according to the cross tabulation analysis, it can be established that it is not characteristic of large enterprises to only employ the services of IT specialists. We have come to this conclusion on account of the adjusted residual value (-3.2).

The examination of the relationship between company size and cloud services shows no significant link. The significance value of Pearson's chi-square is 0.960, which exceeds the 0.05 level. Hence, we have to accept the null hypothesis, the independence of the variables. That is to say, micro-enterprises may use cloud services of any type just as well as large enterprises do. The cross tabulation analysis does not show any significant attraction or repulsion.

It should also be analysed how the type of the IT or cloud service affects the need for specialists. More specifically, it is to be examined whether there is any need for IT specialists as an employed service, and if yes, of what type. It can be assumed that, if the enterprise outsources IT activities to external service providers, then there will be no need for an IT professional.

Hypothesis 5 assumes that the recourse to IT services influences the need for IT specialists. The cross tabulation analysis of the sample reveals no significant relationship between the employed IT service and the need for an IT professional.

The significance value of Pearson's chi-square is 0.292, which exceeds the 0.05 level. Hence, we have to accept the null hypothesis, the independence of the variables. The null hypothesis, i.e. the independence of the variables, has to be accepted also for the type of the IT service used by the company and the need for system developer and operator expert groups. The significance value of Pearson's chi-square is 0.130, which exceeds the 0.05 level. Our assumption that there is no need for IT experts if IT activities are outsourced has proven to be false.

If we examine the frequency values for the types of IT services used by the company, then it can be established, based on the sample, that the exclusive need for the operator is more typical of the enterprises that only use the services of an IT specialist. This conclusion is supported by the adjusted residual (2), while in the case of the employment of both developers and operators there is actual repulsion, as the value of the adjusted residual is -2.3.

The cross tabulation analysis shows similar results if the company employs a cloud service. There is no significant relation between the use of the cloud service and the type of the IT service used by the company or the need for an IT expert.

However, if we turn to examine the relationship between the type of the cloud service and the required group of IT experts, then we will get different results.

Based on our sample, it can be stated that there is a close associative link between the type of the cloud service and the required group of IT specialists. This conclusion can be established on the basis of the Pearson index and Cramér's V value of 0.609. The significance level of the Pearson index is 0.009, which is lower than the allowed value of 0.05. Hence, we reject the null hypothesis and determine there is a significant relationship between the two variables. The analysis of distributions on the cross-table reveals that the companies who "lease" all their IT services from the cloud typically only require a system operator. The attraction between the two variables is shown by the adjusted residual value of 3.7. It is definitely not typical for this group to require IT developers and operators. The repulsion between the two variables is shown by the indicator (-3.3).

Therefore, the analysis of the need for IT professionals has led to different conclusions for enterprises resorting to the services of IT companies and for those using the cloud (via the Internet). So, the question arises as to whether the enterprises possess adequate knowledge about cloud services.

Hypothesis 6 assumes that the spread of cloud-based technologies is slowed down by the incomplete knowledge of the companies regarding this IT service.

This question is significant also because a German research confirmed that the lesser the knowledge, the greater the fear regarding the issues of IT safety and data loss (Repschläger–Zarnekow 2011).

In order to confirm our hypothesis, we determined opinions that might provide reasons for the refusal of the cloud service. The respondents to our questionnaire had to rate on a five-graded Likert scale, ranging from complete disagreement to complete agreement, how much they agreed or disagreed with the statements. Due to the negative statements, the recoding of the ratings was required for the sake of a uniform interpretation. Thus, the highest score was assigned to complete disagreement and the lowest to complete agreement as the expression of a negative attitude. We calculated ranking values from the ratings using weighted averages.

Kendall's concordance coefficient is used for comparing the concordance of several rankings. First, we conducted an overall examination of the respondent companies (80). The results are presented in Table 7.

Table 7. Ranking of enterprises according to their attitudes towards cloud services

Statements	Ranking values
Access to the cloud service is slow.	5.50
I do not trust this type of service.	5.28
It is too difficult to transpose my own applications.	4.76
There is a risk of data loss and unauthorised access.	4.54
Data safety will not be any greater and related costs will not be reduced.	4.31
No major IT investment is needed.	4.09
Operational costs do not decrease with the outsourcing of IT services.	3.86
There may be interruptions in the access to the service, e.g. due to Internet failures.	3.67

Source: Own research

The high values of the ranking show that the companies do not agree at all with the negative statements. That is to say, the high values of the ranking reveal that the companies completely disagree with the negative statements, or to put it differently, the attitude towards cloud services is positive. The statements that received the lowest scores were: "operational costs do not decrease" and "there may be interruptions in the access to the service". The low significance value

(0.00) does not exceed the level of 0.05. The concordance of the ranking is thus significant and not the product of chance. However, Kendall's W value (0.089) shows a very low level of agreement, i.e. the rank scales of the respondents are not concordant.

In order to achieve more accurate results, the comparison of the rankings according to company size should be examined in groupings based on the cloud service recipients and not on the users. Although the number of elements belonging to each group thus decreases, the number of elements required for robust tests (minimum 5) is secured for each group.

The analysis was first applied to the group of cloud users (39), with results shown in Tables 8 to 11.

Table 8: Ranking of micro-enterprises using cloud services

Statements	Ranking values
I do not trust this type of service.	5.94
It is too difficult to transpose my own applications.	5.09
Access to the cloud service is slow.	4.88
There is a risk of data loss and unauthorised access.	4.68
Data safety will not be any greater and related costs will not be reduced.	4.62
There may be interruptions in the access to the service, e.g. due to Internet failures.	4.00
Operational costs do not decrease with the outsourcing of IT services.	3.44
No major IT investment is needed.	3.35

Source: Own research

Table 9: Ranking of small enterprises using cloud services

Statements	Ranking values
I do not trust this type of service.	5.33
Data safety will not be any greater and related costs will not be reduced.	5.33
Access to the cloud service is slow.	5.25
It is too difficult to transpose my own applications.	4.83
There is a risk of for data loss and unauthorised access.	4.33
Operational costs do not decrease with the outsourcing of IT services.	3.75
There may be interruptions in the access to the service, e.g. due to Internet failures.	3.67
No major IT investment is needed.	3.50

Source: Own research

Table 10: Ranking of medium enterprises using cloud services

Statements	Ranking values
There is a risk of data loss and unauthorised access.	6.29
I do not trust this type of service.	6.21
Access to the cloud service is slow.	5.50
It is too difficult to transpose my own applications.	4.00
No major IT investment is needed.	3.79
Data safety will not be any greater and related costs will not be reduced.	3.71
There may be interruptions in the access to the service, e.g. due to Internet failures.	3.43
Operational costs do not decrease with the outsourcing of IT services.	3.07

Source: Own research

Table 11: Ranking of large enterprises using cloud services

Statements	Ranking values
Access to the cloud service is slow.	6.44
I do not trust this type of service.	5.67
There is for a risk of data loss and unauthorised access.	5.06
No major IT investment is needed.	4.78
It is too difficult to transpose my own applications.	4.00
Data safety will not be any greater and related costs will not be reduced.	3.94
Operational costs do not decrease with the outsourcing of IT services.	3.06
There may be interruptions in the access to the service, e.g. due to Internet failures.	3.06

Source: Own research

The tables reveal that the ranking values are high among the users of cloud services also in the grouping according to company size. That is to say, the attitude towards the cloud service is positive, and the respondents do not agree with the negative statements. However, in the case of small enterprises, the calculated significance value (0.595) exceeds the allowed 0.05. Therefore, it can be concluded that the concordance of the rankings is random.

For the other company sizes, the agreement is significant, as reflected by the lower than allowed calculated significance value. The concordance of the rankings is not a chance occurrence. Kendall's W value is low among the rankings of micro-enterprises (0.166) and shows a medium-low (0.365 and 0.291) coincidence measure between the rankings of medium and large enterprises.

However, all rankings reveal that the attitude is less positive for the statements "operational costs do not decrease" and "there may be interruptions in the access to the service". So, the surveyed enterprises tend to agree more with these statements.

The picture becomes more divergent for the companies that do not use cloud services. In the case of the analysis according to company size, the calculated significance value exceeds the level of 0.05 for every group. So, there is no significant agreement, and the concordance of the rankings is only due to chance.

Hence, in the analysis of the enterprises not using cloud services (41), it is appropriate to consider all size groups together. It can be established that the concordance of the rankings is not due to chance, which is reflected by the significance value of 0.007. Nevertheless, the measure of agreement is quite weak, as Kendall's W value is very low (0.067). The ranking reveals a positive attitude here as well (Table 12). The companies do not agree with the negative statements, as reflected by the high values. At the same time, the assessment of the cloud services is uncertain for the risk of "data loss and unauthorised access" and "interruptions in the access to the service".

Table 12. Ranking of enterprises not using cloud services

Statements	Ranking values
Access to the cloud service is slow.	5.59
It is too difficult to transpose my own applications.	4.90
I do not trust this type of service.	4.76
No major IT investment is needed.	4.38
Operational costs do not decrease with the outsourcing of IT services.	4.35
Data safety will not be any greater and related costs will not be reduced.	4.21
There is a risk of data loss and unauthorised access.	4.11
There may be interruptions in the access to the service, e.g. due to Internet failures.	371

Source: Own research

The rankings reveal that micro-enterprises and those that do not use the cloud service have lower scores. That is to say, they are more unsure in their assessment of the IT services of this type. This image is well reflected among those who do not use the service, for whom the issue of data loss and the safety

of the IT system appear as problems. Thus, the results of the German research (Repschläger–Zarnekow 2011) have been confirmed in Hungary as well. The spread of cloud service usage is hindered by the lack of knowledge precisely among the companies with the greatest potential.

For the Kendall tests, the analysis of the Likert scale was carried out at the level of the ordinal scale, with the application of rankings. However, according to the bibliography presented in the previous chapter, it can also be interpreted as a metric scale if we were to calculate not rank numbers but averages based on the scale values. The analysis of the Kendall tests confirmed the divergences between the assessments of cloud service adopters and those who do not use them. These divergences may be demonstrated by variance analysis (ANOVA). According to the null hypothesis (H_0), the category averages match. In our case, this means that the evaluation of the statements concerning cloud services is not dependent on whether the service is adopted. We tested the null hypothesis with the test function F presented in Table 13.

Table 13. Variance analysis of the ranking values of cloud services

Statements	F	Sig
Access to the cloud service is slow.	5.628	.020
It is too difficult to transpose my own applications.	5.571	.021
I do not trust this type of service.	19.887	.000
No major IT investment is needed.	1.408	.239
Operational costs do not decrease with the outsourcing of IT services.	.891	.348
Data safety will not be any greater and related costs will not be reduced.	5.310	.024
There is a risk of data loss and unauthorised access.	18.134	.000
There may be interruptions in the access to the service, e.g. due to Internet failures.	8.590	.004

Source: Own research

Table 13 shows that the significance values of the statements related to the F trial are lower than 0.05 – with the exception of two values –, hence, we reject the null hypothesis. This means that the adopters of cloud services evaluate the service differently from those who do not use it. However, the two groups agree in their evaluation of the effect on the operational costs of the service and on IT investment, since the significance level exceeds the value of 0.05 for these two statements.

Conclusions

The building of their IT system, the applied information technology and the way in which the IT professionals necessary for its operation and development are ensured are of essential importance to companies in order to operate and to fully exploit their potential. Some of our research issues have been partially touched on by other studies as well. Some authors have discussed the IT systems employed by the different companies and the factors influencing their development, while other have studied the need for IT experts. However, we conducted our research to answer the question on how these two areas were related.

We set up hypotheses, some of which were confirmed, whereas others were not (Table 14).

Table 14. The results of hypothesis testing

Hypothesis number	Content of the hypothesis	Accepted/ Rejected
1.	We assume that company size influences the usage of ERP systems.	Accepted
2.	We assume that ERP systems do not fully integrate horizontal and vertical functions and levels.	Accepted
3.	We assume that company size influences the usage of the IT application.	Accepted
4.	We assume that company size determines whether an IT specialist is needed.	Accepted
5.	We assume that the recourse to IT services influences the need for IT specialists.	Rejected
6.	We assume that the spread of cloud-based technologies is slowed down by the incomplete knowledge of the companies regarding this IT service.	Accepted

Source: Own research

Starting from our empirical survey, we first analysed the information system used by the companies. We established that its design was influenced by company size. Comparing our results with previous research studies, it can be concluded that our results were similar. However, it can be noted, as a positive trend, that the usage of IT applications, including ERP systems, is also increasing among micro-enterprises.

The results of our data collection were also used for the purposes of conceptual interpretation. We found that ERP systems neither cover all functions of the enterprises nor adequately service all the management levels. In other words, one

cannot speak of complete horizontal and vertical integration. However, in our view, this does not cause a problem if the software covering the missing area is integrable, i.e. capable of communicating with the ERP system.

We also examined whether company size influenced the development of the IT application (application software) and our results confirm the relationship. As a trend, the usage of "canned software" and own developments are both decreasing. These design forms mostly appear among micro-enterprises.

However, the solutions that further develop the frameworks of IT companies, integrating the special needs of the company, are increasingly often found among micro-enterprises as well.

We have also concluded that, although company size influences whether an IT specialist is needed, it does not influence whether this need is for a developer or an operator. In other words, there may be a demand for both professional groups, both at smaller companies and larger corporations.

Based on our research concerning the relationship between IT services and the need for IT specialists, we have established that the employment of services does not influence whether IT specialists are needed. At the same time, on the basis of more detailed examinations, it can also be stated that, if a company seeks the services of an external IT professional, then its need is only for operators. However, if the usage of the IT service is cloud-based, then it does influence the type of the IT professional who is needed. If the company leases a complete cloud service, also procuring the application software of the operator from the cloud, then it typically only demands the service of IT operators.

Based on our research, the assessments of cloud services differ among companies. In general, the attitude of the companies is positive; they consider this type of service to be a good option. However, the companies lacking appropriate knowledge about this solution are uncertain. They are afraid of losing their data, unauthorised access and problems with IT systems. All this slows the spread of cloud services. Nevertheless, both those who use cloud services and those who do not use them agree that this service does neither put an end to IT investments nor significantly reduces costs.

Our research findings indicate that IT businesses are expected to offer companies such integrated systems that, besides boasting the conventional data content and functions, allow for meeting special requirements as well. A further perceivable trend is that, instead of selling products, rendering services, with

cloud-based services among them, is gaining importance. Therefore, IT service providers are forced to implement the required technology to ensure that such services are available.

References

Babbie, E. 2013. *The Practice of Social Research.* Wadsworth: Cengage Learning.

Badinszky, P. 2011. *Információs technológiák alkalmazása.* http://www.tankonyvtar.hu/en/tartalom/tamop412A/2010-0019_Informacios_technologiak_alkalmazasa/index.html, downloaded: 13.08.2018.

Benkőné Deák, I.–Bodnár, P.–Gyurkó, Gy. 2008. *A gazdasági informatika alapjai.* Budapest: Perfekt Zrt.

Bocij, P.–Chaffey, D.–Greasley, A.–Hickie, S. 2003. *Business information systems. Technology, development and management for the e-business.* Harlow, New York: Financial Times-Prentice Hall.

Breyer, J. 2018. *European ICT Professional Role Profiles DRAFT version 2*. http://www.ecompetences.eu/, downloaded: 17.08.2018.

Budd, J. M. 2011. Meaning, truth, and information: prolegomena to a theory. *Journal of Documentation* 67(1), 56–74.

Carifio, J.–Perla, R. J. 2007. Ten Common Misunderstandings, Misconceptions, Persistent Myths and Urban Legends about Likert Scales and Likert Response Formats and their Antidotes. *Journal of Social Sciences* 3(3), 106–116.

Chikán, A. 2008. *Vállalatgazdaságtan.* Budapest: Aula Kiadó.

Cser, L.–Németh, Z. 2007. *Gazdaságinformatikai alapok.* Budapest: Aula Kiadó.

Csíkos, Cs. 1999. Nem-paraméteres statisztikai módszerek alkalmazási lehetőségei a pedagógiai kutatásban. *Iskolakultúra* 9(2), 113–119.

Fliszár, V.–Bollók, S. 2014. A saját testsúlyról alkotott önkép hatása az egyén sportolási és dohányzási szokásainak kapcsolatára. *Statisztikai Szemle* 92(5), 474–489.

Giller, T. 2014. *ERP Integrált vállalatirányítási rendszer múlt–jelen–jövő.* Budapest: Underground Kft.

Halassy, B. 1996. *Ember-információ-rendszer. Avagy mit kell tudni az információs rendszerekről?* Budapest: IDG Magyarországi Lapkiadó Kft.

Hastie, T.–Tibshirani, R.–Friedman, J. 2009. *The Elements of Statistical Learning. Data Mining, Inference, and Prediction.* New York: Springer Science and Business Media.

Hetyei, J. 1999. *Vállalatirányítási információs rendszerek Magyarországon.* Budapest: Computerbooks.

Hetyei, J. 2001 *Vezetői döntéstámogató és elektronikus üzleti megoldások Magyarországon.* Budapest: Computerbooks.

Horváth, D.–Mitev, A. 2015. *Alternatív kvalitatív kutatási kézikönyv.* Budapest: Alinea Kiadó.

Hungarian Act (2004) *2004. évi XXXIV. törvény a kis- és középvállalkozásokról, fejlődésük támogatásáról*. https://net.jogtar.hu/jogszabaly?docid=a0400034.tv, downloaded: 19.08.2018.

Kacsukné Bruckner, L.–Kiss, T. 2007. *Bevezetés az üzleti informatikába.* Budapest: Akadémiai Kiadó.

Kadre, S. 2011. *Going corporate. A geek's guide.* New York: Apress.

Koloszár, L. 2009. *Információrendszer fejlesztése, bevezetése és sajátosságai a vállalati gyakorlatban, különös tekintettel a kis- és középvállalkozásokra.* PhD Thesis. Sopron: NYME. http://ilex.efe.hu/PhD/ktk/koloszarlaszlo/disszertacio.pdf, downloaded: 16.08.2018.

Koloszár, L. 2013. *Vállalati információs rendszerek.* Sopron: NYME Kiadó.

Komló, Cs. 2013. *Információs rendszerek tervezésének módszertana. Médiainformatikai Kiadványok.* Eger: Eszterházy Károly Főiskola.

Kovács, K. 2013. *Kutatási és publikálási kézikönyv nem csak közgazdászoknak.* Budapest: Akadémiai Kiadó.

Morgan, G. A.–Leech, N. L.–Gloeckner, G. W.–Barrett, K. C. 2013. *IBM SPSS for Introductory Statistics. Use and Interpretation.* New York, NY: Routledge Taylor & Francis Group.

Nagyné Halász, Zs.–Gubán, M. 2016. Az információs rendszer és fogalomrendszere. In: Csillag, S. (ed.) *Alkalmazott Tudományok III. Fóruma.* Budapest: Budapesti Gazdasági Egyetem, 525–537.

Nicolescu, V.–Funk, B.–Niemeyer, P.–Heiler, M.–Wittges, H.–Morandell, T.–Visintin, F.–Stegemann, K. 2007. *SAP exchange infrastructure for developers*. Boston: Galileo Press.

Raffai, M. 2003. *Információrendszerek fejlesztése és menedzselése*. Győr: Novadat Kiadó.

Repschläger, J.–Zarnekow, R. 2011. *Studie: Cloud Computing in der IKT-Branche. Status-quo und Entwicklung des Cloud Sourcing von KMUs in der Informations- und Kommunikationsbranche in der Region Berlin Brandenburg.* Berlin: Universitätsverlag der TU. https://depositonce.tu-berlin.de/bitstream/11303/3116/1/Dokument_32.pdf, downloaded: 17.08.2018.

Sajtos, L.–Mitev, A. 2007. *SPSS kutatási és adatelemzési kézikönyv.* Budapest: Alinea Kiadó.

Sasvári, P. 2010. *The development of information and communication technology: An empirical study.* Miskolc: University of Miskolc, Faculty of Economics.

Sasvári, P. 2013. Az üzleti információs rendszerek használatának jellemzői a magyarországi és ausztriai kis- és középvállalkozások körében. In: Karlovitz, J. T. (ed.) *Ekonomické štúdie - teória a prax.* Komárno: International Research Institute, 358–368.

Sasvári, P.–Rauch, W.–Szabó, J. 2014. *Diverse reasons for implementing business information systems. The example of typical usage patterns of business information*

systems among Austrian and Hungarian business enterprises. Saarbrücken: LAP Lambert Academic Publishing.

Szabó, Gy.–Benczúr, A.–Molnár, B. 2013. ERP–rendszerek a számítási felhőben (Cloud Computing). A felhőtechnikával összefüggő új ERP–kiválasztási kritériumok elemzése. *Vezetéstudomány* XLIV(11), 62–70.

Szabó, I. 2013. A felsőoktatási képzések munkaerő-piaci szempontból. *Vezetéstudomány* XLIV(11), 52–61.

Székelyi, M.–Barna, I. 2002. *Túlélőkészlet az SPSS-hez. Többváltozós elemzési technikákról társadalomkutatók számára*. Budapest: Typotex Kiadó.

Szepesné Stiftinger, M. 2010. *Rendszertervezés 1. Az információrendszer fogalma, feladata, fejlesztése*. http://www.tankonyvtar.hu/hu/tartalom/tamop425/0027_RSZ1/index.html, downloaded: 13.08.2018.

Sziray, J.–Gaul, G. 2006. *Vállalati információs rendszerek I*. Győr: Universitas-Győr Kht.

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Economic and financial determinants of foreign investments: Competitiveness from a developing economy perspective[1]

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Globalisation has increased the significance of foreign direct investment or FDI as a source of long-term capital that, under the right policy environment, provides numerous benefits to the host countries. This research seeks to analyse the investment potentials of a developing economy by determining the economic and financial variables that account for the decision of investors in locating their investments. This study investigates the relationship between net FDI inflows for the period 1996-2014 and market size, infrastructure and labour variables, together with stock market development and real interest rate, using multiple regression analysis. The results suggest that market size, transport infrastructure, labour costs and real interest rate are significant and positive determinants of FDI, while telecommunications infrastructure is significantly but negatively correlated to FDI inflows. Surprisingly, labour quality indicators showed mixed results, while stock market development is negatively correlated albeit statistically insignificant to FDI flows for the study period.

Keywords: FDI, OLI framework, competitiveness, developing economy.
JEL codes: F21, M48.

Introduction

The recent decades have witnessed the growing integration of the world's community of nations, a phenomenon better known as globalisation. Advances in technology, the expansion of international trade, and greater financial flows in the economies are seen as among the foremost drivers of globalisation (Penalver 2002; Pennisi 2012). Foreign direct investment or FDI has grown in significance during the last decades and has been expanding at a faster rate than trade (Isayev 1998; Leitao 2012). The United Nations Conference on Trade and Development (2015) reported that global FDI inflows had reached $1.23 trillion in 2014 and were projected to rise to $1.4 trillion in 2015, $1.5 trillion in 2016 and $1.7 trillion in 2017.

Foreign direct investment is the most stable and least volatile among the three main sources of outside capital, the other two being equity market and international

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lending (Balboa–Medalla 2006; Walsh–Yu 2010). Since FDI is mostly embodied in plant, equipment, and workforce, these inflows are for the long term and cannot be easily withdrawn. These commitments do not "flee with the rapidity of stock market investors or commercial bank lenders" (Moran 1999. 2).

Among the developing economies, the Philippines has not been excluded from the abundant flow of global FDI. The Bangko Sentral ng Pilipinas (2015) reported that, in 2014, the country's net FDI inflows reached an all-time high of US$ 6.2 billion, a 65.78 percent increase from the US$ 3.7 billion registered in 2013. The figure, however, pales in comparison to the net FDI flows received by its neighbouring countries in the Association of Southeast Asian Nations (ASEAN). In the same year, net FDI inflows to Singapore amounted to US$ 67.5 billion; to Indonesia, US$ 26.3 billion; to Malaysia, US$ 10.6 billion; and to Vietnam, US$ 9.2 billion. Although Thailand fared rather poorly in 2014, receiving only US$ 3.7 billion, it nonetheless garnered significant FDI inflows in precedent years, i.e. US$ 12.9 billion and US$ 15.8 billion in 2012 and 2013, respectively (World Bank 2016).

The primary goal of this study is to determine which country-specific economic and financial variables account for the decision of foreign investors to locate their investments in the Philippines for the period 1996 to 2014. Specifically, the study aims to achieve the following objectives: (1) to determine the relationship of net FDI flows and *the selected economic variables*, i.e. market size, infrastructure, cost of labour and quality of labour, *and financial variables*, i.e. stock market development and real interest rate, and (2) to assess which of these variables require improvement for the country to better compete with neighbouring ASEAN countries in attracting foreign direct investment.

Literature review and conceptual framework

This chapter is divided into two main parts: first, the discussion of the economic and financial variables in country location choices of foreign investors and, second, the discussion of the conceptual framework.

Literature review

A number of studies have been made in the attempt to understand the economic, financial, social and political variables that account for the FDI location choices of foreign investors. The difficulty in precisely identifying the exact variables that affect a firm's decision to geographically locate a particular

investment may in part be credited to the fact that there are different types of foreign direct investments, all of which are affected by different factors (Lim 2001). Nonetheless, the large amount of literature compiled under this area of study reveals that, despite the many different variables considered by different authors, certain determinants of FDI are found to be ubiquitous in most empirical models. Among these recurring variables are economic factors such as the size of the domestic market, infrastructure, cost and quality of labour, and financial factors such as stock market development and real interest rate.

Market Size

The size of the host market, as measured by the Gross Domestic Product (GDP), is foremost among the most studied determinants of FDI as indicated by its presence in a vast array of empirical research studies (Aldaba 1994; Benacek et al. 2000; Leitao 2012). The pervasiveness of this variable may be attributed to its deep and robust foundations in theory, particularly in literature involving the fundamental motivations of FDI, i.e. the underlying reasons why a firm would resolve to locate its production on foreign shores and hence become multinational (Lim 2001).

The conventional view on the motivations of FDI posits two main impetuses for FDI to occur, the first of which is *market-seeking* (Shatz–Venables 2000). Market-seeking happens when "multinational enterprises invest in a foreign country to exploit the possibilities granted by markets of greater dimensions" (Franco et al. 2008. 7).

For this reason, FDI that seeks to serve local markets is called market-seeking FDI. This type of FDI is also called horizontal FDI since it involves "building duplicate plants in a foreign location to supply the market there" (Lim 2001. 11). Moreover, since the emphasis of market-seeking FDI is on local production and local sale, the factors that are most apposite to it are "market size, market growth and consumption ability" (Na–Lightfoot 2012. 265). Indeed, access to a large domestic market is especially critical to market-seeking FDI, since it is essentially 'import-substituting' rather than 'export-oriented' (Aldaba 1994. 52).

Infrastructure

Physical infrastructure is another key determinant of FDI. It can be concluded that there are three dimensions in physical infrastructure based on the studies of Aldaba (1994), Pernia et al. (2005) and Franco et al. (2008). The first dimension is transport infrastructure, which includes roads, bridges, railways, seaports, airports and related transport structures and facilities. The

second dimension involves communications infrastructure, which is classified primarily into telecommunications structures and facilities for the purpose of transmission and reception of information via electronic means or otherwise. The third dimension includes energy or power (electricity), water and other utilities and services as well as the corresponding structures and facilities involved in the generation, transmission and distribution of said services. An effective transport infrastructure network is an absolute must, as "effective modes of transport … enable entrepreneurs to get their goods and services to market in a secure and timely manner and facilitate the movement of workers to the most suitable jobs" (WEF 2016. 307). The presence of a solid telecommunications network with an extensive coverage "allows for a rapid and free flow of information, which increases overall economic efficiency by helping to ensure that businesses can communicate and decisions are made by economic actors taking into account all available relevant information" (WEF 2016. 308).

In a survey published in *The Global Competitiveness Report 2014-2015*, when business executives were asked to rank a list of 16 factors for doing business from the most problematic to the least, the inadequate supply of infrastructure (WEF 2016) was ranked the second most problematic factor for doing business in the Philippines. The report ranked the infrastructure in the Philippines 91st among 144 economies that were included in the said report. Particularly worrisome are the conditions of the country's transport infrastructure: the quality of roads was ranked 87th, the quality of railroad infrastructure – 80th, the quality of port infrastructure – 101st and the quality of air transport infrastructure – 108th. Other aspects of the nation's infrastructure network fared equally poorly; with regards to telephony, mobile penetration in the country was ranked 86th, and fixed-line telephone density, 113th. The quality of electric supply in the country, ranked 87th, is also a source of great concern.

Cost of Labour

The conventional view on the motivation of FDI posits two main reasons for the decision of firms to locate firm production on foreign shores. The first reason is to seek for new markets, otherwise known as *market seeking*, as presented in the preceding section. The second is to seek for certain types of resources "that are not available at home, like natural resources or raw materials, or that are available at a lower cost, such as unskilled labour that is offered at a cheaper price with respect to the home country" (Franco et al. 2008. 7). This is known as *resource seeking*. Therefore, FDI that aims to acquire lower cost inputs is

known as *resource-seeking FDI* (Shatz–Venables 2000). It is also called vertical or production cost-minimising FDI since it involves "slicing the vertical chain of production and relocating part of the chain in a low-cost location" (Lim 2001. 11). The term "outsourcing" which Moran (1999. 283) described as "shopping around for cheap inputs" may be used in relation to resource-seeking FDI.

One of the primary reasons for resource-seeking FDI is to pursue firm production in a foreign country where labour is offered at a lower cost relative to the firm's home country. This has resulted in the scenario known as "race to the bottom" where competing countries, in an attempt to enhance their appeal to foreign investors, offer "ever greater tax breaks and ever weaker regulations" (Kucera 2006. 31) and, thus, labour costs have often been driven as low as possible relative to rival countries.

The relationship between labour costs and FDI inflows has been the subject of a large strand of empirical literature. Indeed, one will find that a review of extant literature will not so easily yield uniform conclusions; while conventional wisdom would argue for the existence of a negative relationship between labour costs and FDI inflows, the results of several empirical works indicate that the relationship between the two may not be so linear after all, and that the assumption of a linear relationship may be flawed. The succeeding discourse summarises the key findings of several scholars.

Cushman (1987) theoretically established the negative relationship between wage and FDI in a neoclassical framework. His theoretical model indicated that "a rise in the host country wage or fall in the source country wage discourages FDI" (Cushman 1987. 183). To lend empirical support to the then largely theory-based assumption of the negative relationship between labour costs and FDI, he used time-series analysis on FDI flows between the U.S. and five other countries. Estimation results revealed that, indeed, rising wages encouraged FDI outflows and discouraged inflows.

Feenstra and Hanson (1997) discovered that low labour costs had a substantive effect on U.S.-owned assembly plants in Mexico called *maquiladoras* that were set up precisely to take advantage of low wage costs, affirming the negative correlation between labour costs and FDI inflows.

In contrast, Harrison (1994) challenged the assumption posited by conventional wisdom that FDI and labour costs are inherently negatively correlated. While critics argued that "foreign investors leave the United States and other developed countries in search of lower wages … (and) take advantage of weak labour laws to pay very low wages under abysmal working conditions"

(Harrison 1994. 9), the findings of her extensive research actually pointed to the contrary, i.e. "foreign-owned firms generally pay higher wages than domestic firms, leading to an increase in overall wages in the host country" (Harrison 1994. 9). In the United States, for instance, she found out that foreign firms "pay 10 percent to 20 percent higher wages than domestic firms; in developing countries like Mexico and Venezuela, the wage gap is even larger – multinationals pay as much as 30 percent more than domestic firms" (Harrison 1994. 9).

Helldin (2007) analysed the regional determinants of FDI in the eastern coastal provinces of China. Contrary to conventional assumptions, the results of her econometric analysis indicated a positive relationship between wage levels and FDI inflows. However, she noted that this occurred only in the Chinese provinces where education levels, a proxy for labour quality, were found to be high relative to the wage levels. In areas where recorded education levels were found to be low, wage increases tended to discourage FDI inflows.

Quality of Labour

Arguably, human capital is the most vital among all inputs to any activities of a firm, not the least for multinational enterprises. The findings of numerous empirical works of various authors provide affirmation that a well-educated, highly skilled, fully trained labour force is readily sought after by foreign investors. For instance, the studies done by Mody (1998) pointed out that, instead of labour costs, it was labour quality that attracted Japanese FDI into certain Asian locations. Similarly, Fung, Iizaka, Lee and Parker (2000) found that labour quality, as measured by educational attainment, was a significant factor in accounting for U.S. and Japanese FDI in Chinese provinces.

Nonnenberg and Mendonca (2004) discovered that the level of schooling, a proxy used for quality of labour, was a positive and significant determinant of FDI inflows to 38 developing countries for the period 1975 to 2000. They inferred that the greater part of FDI flows into developing countries "has been directed towards activities that are relatively knowledge-intensive" and that policies devised towards "increasing the level of education must be pursued" (Nonnenberg–Mendonca 2004. 6).

Na and Lightfoot's econometric work indicated that labour quality, measured using the total number of primary, secondary and tertiary schools, had a positive impact on FDI inflows to 30 Chinese regions in the year 2002. The authors then pointed out the worrisome state of human capital development in China and called for measures to address this pressing issue.

Majeed and Ahmad (2008) intended to measure the effects of human capital development on FDI inflows to developing countries. To measure human capital development, they chose two indicators, namely health expenditures and illiteracy rate. They employed a fixed effects model on panel data for a sample of 23 developing countries, the Philippines included, for the period 1970 to 2004. Econometric results indicated a highly significant and positive relationship between health expenditures and FDI inflow. Illiteracy, meanwhile, was found to be negatively associated with FDI inflows, although the coefficient was statistically non-significant.

Stock Market Development

Two diverging opinions exist on the linkage between stock market development and FDI. Academic scholars like Claessens, Klingebie and Schmukler (2001) noted the positive correlation between stock market development and FDI. A high degree of stock market development reflects the presence of characteristics that are also conducive to FDI and therefore looked at favourably by foreign investors. This positive view is dominant among most scholars, as reflected in numerous empirical works. Some of these are discussed in the succeeding paragraphs.

Nazir, Nawaz and Gilani (2010) discovered that both stock market development and FDI proved contributory in sustaining economic growth in Pakistan. They therefore proposed that the development of stock markets should be concurrent with the industrial and manufacturing growth of the country.

Arcabic, Globan and Raguz (2013) found out that the upward "movement on the Croatian stock market, measured by trading volume" (Arcabic et al. 2013. 122), was a positive and significant short-run determinant of FDI flows in Croatia. According to them, this is because "events on the stock market signalise the vitality and investment climate of the domestic market to foreign investors" (Arcabic et al. 2013. 110). Moreover, they observed that, in the short run, FDI significantly reacted to shocks in the stock market, albeit with an apparent lag.

On the contrary, there are scholars, like Kucera (2006), who argue that stock market development and FDI are inherently inversely related. They theorise that, in countries where the development of the stock market is not aggressively pursued, FDI is seen as the better alternative amidst the existence of weak institutions, capital risks and financial underdevelopment. By engaging in FDI, firms are able to overcome the difficulties of investing through stock markets, therefore FDI is hypothesised to be greater in countries with underdeveloped stock markets.

Real Interest Rate

There is a general consensus among researchers that a higher interest rate prevailing in the host country relative to the foreign investors' home country attracts greater inward FDI flows, since cost advantages may be realised on the part of the investors who derive their financing from home countries due to higher return on capital. Various research studies, like Faroh and Shen (2015), Cevis and Camurdan (2007), Majeed and Ahmad (2008) and Kurihara (2012), validated this premise in their empirical works.

For instance, Cevis and Camurdan (2007) found out that real interest rate, an indicator of macroeconomic policy, was a positive and significant explanatory economic variable of FDI inflows to 17 developing countries and transition economies for the period 1989 to 2006, while Majeed and Ahmad (2008) found the impact of real lending interest rate on FDI flows to 23 developing countries for the period 1970 to 2004 to be positive and significant. Drawing from this, they posited that FDI flowing into the said countries was financed in the home country; thus, higher interest rates prevailing in the host country would give foreign investors cost advantages over domestic firms and ease the entry and establishment of their investments in the host market.

Lastly, Kurihara (2012) sought to examine the relationship between certain macroeconomic variable determinants and FDI in ASEAN countries for the sample period 2002 to 2011. The author found out that interest rates had a strong positive and significant effect not just on FDI flows into the countries in the region, but also on the volatility of said flows. The author suggested that the results might indicate that "higher banking competition (spreads are small) could be an element of stabilisation in FDI", but that "the development of domestic banking system does not necessarily achieve more stable FDI" (Kurihara 2012. 15).

Conceptual framework

The framework of the study uses the eclectic paradigm of international production where the formalisation of FDI determinants is evident. This paradigm, also known as the *OLI framework*, has "remained the dominant analytical framework for accommodating a variety of operationally testable economic theories of the determinants of foreign direct investment and the foreign activities of multinational enterprises" (Dunning 2000. 163).

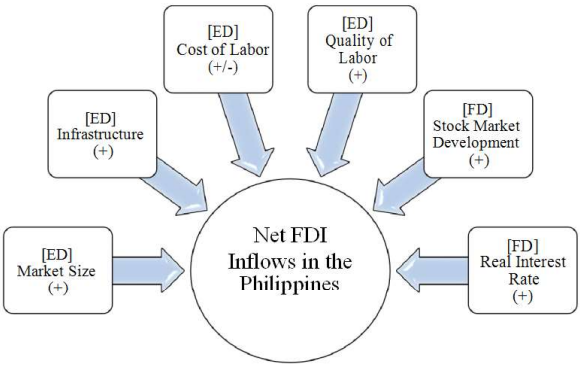
OLI stands for the three categories of advantages or sub-paradigms that are prerequisites to FDI. The first of these is the *ownership* (O) *specific advantages* or the advantages that a firm must have and that will enable it to gain a competitive

edge over other firms, in particular the indigenous firms of the country or region where the investment will be made. These firm-specific advantages must allow the firm to "overcome the additional costs of foreign production such as the costs of dealing with foreign administrations, regulatory and tax systems, and customer preferences" (Lim 2001. 10). The second category of advantages is the *location* (L) *specific advantages*. Supposing that the first condition is satisfied and the firm indeed has in its possession just such an advantage or advantages as described above, it must then resolve where it can best "augment or exploit its O specific advantages by engaging in FDI" (Dunning 2000. 164). Location-specific advantages would include economic factors such as the "distribution of natural endowments, input prices, labour quality and productivity and infrastructure" (Moran 1999. 2), "quantitative and qualitative factors of production, costs of transport, telecommunications, market size" and social factors such as "distance between the home and host countries, cultural diversity, attitude towards strangers, etc." (Denisia 2010. 108). It also includes political factors such as policies, laws, rules and regulations that affect FDI. The third category of advantages is the *internalisation* (I) *advantages*. Supposing that the firm has secured possession of some O specific asset that will enable it to gain an edge over other firms, it must thence decide whether it will use or exploit this O specific asset itself, i.e. internalise it or simply sell or lease and license it to other firms. If the firm evaluates both options and finds that it is more advantageous for itself to internalise this asset, then the more likely it is to use and exploit this asset itself in combination with at least some factors located abroad and hence engage in FDI rather than license the right to do so to other firms (Dunning 2000; Lim 2001; Denisia 2010). Thus, taken together, the OLI paradigm "explains *why* (ownership advantage) and *how* (internalisation advantage) a firm decides to become a multinational and *where* (location advantage) it is more likely to invest" (Franco et al. 2008. 7).

Of the three sub-paradigms, the *location-specific advantages* are the most relevant in understanding a firm's decision to *geographically* locate an investment. The decision of the firm on where to locate its investment is primarily dictated by prevailing conditions and inherent characteristics of potential sites for foreign production. Intuitively, the firm will opt for the country or region that is most favourable to the type of FDI it seeks to make. But because countries and regions each possess varying characteristics and attributes, it is critical for a firm to evaluate the advantages and disadvantages beforehand and assess the risks and

benefits of locating in a particular country or region over another before engaging in FDI. Such an appraisal entails the thorough analysis of the factors present in that country to determine if said factors would be to the benefit, or ruin, of the firm. What makes a climate conducive to FDI is determined by the presence or absence of a plethora of factors, among which are economic and financial variables.

Drawing from the second sub-paradigm of Dunning's OLI framework, i.e. the locational advantages sub-paradigm, the following conceptual framework is devised (Figure 1).



Source: Author's illustration based on Dunning's (2000) location-specific variables

Figure 1: Economic and financial determinants of net FDI inflows in the Philippines, 1996-2014

In the case of the Philippines, what economic and financial variables account for the decision of foreign investors to locate their investments in the country? More specifically, what are the economic and financial determinants of net FDI inflows to the Philippines from 1996 to 2014?

This framework posits the 'locational advantages' of the Philippines that foreign investors may find conducive to their enterprises. Specifically, this model outlines the independent variables, i.e. economic variables (market size, infrastructure, cost of labour and quality of labour), and financial variables (stock market development, real interest rate), as 'potential' determinants of net FDI inflows (the dependent variable) in the Philippines for the period 1996 to 2014. [ED] and [FD] indicate 'economic determinant' and 'financial determinant', respectively. The relationship of the independent variable to the dependent variable

is indicated by the plus or minus sign enclosed in parentheses; (+) indicates a positive relationship between the independent variable and the dependent variable, and (-) indicates a negative relationship between the independent variable and the dependent variable. The corresponding relationship between economic and financial variables and FDI has been drawn from the analysis of theoretical arguments and empirical findings in the review of extant and relevant literature.

Methodology

The study uses annualised data for the sample period, 1996 to 2014. Data for the variables and their corresponding measures or proxies are gathered from various institutions. Multiple regression analysis is employed to determine the relationship of FDI flows with the economic and financial variables that were discussed earlier. The statistical software packages *gretl* (Gnu Regression, Econometrics and Time-series Library) *2016a* and *SPSS Statistics v20* are both used for data analysis.

Based on the evaluation of theoretical justifications and empirical evidences from the review of extant literature on the economic and financial determinants of foreign direct investment, the following econometric relationship is proposed:

$$FDI_t = (Market\ Size_t,\ Infrastructure_t,\ Cost\ of\ Labour_t,\ Quality\ of\ Labour_t,\ Stock\ Market\ Development_t,\ Real\ Interest\ Rate_t) \quad (1)$$

Substituting the appropriate proxies and their respective signs for the variables in equation (1), the following equation is derived:

$$FDI_t = \alpha_0 + \beta_1 GDP_t + \beta_2 ROAD_t + \beta_3 TCOMM_t - \beta_4 WAGE_t + \beta_5 NERES_t + \beta_6 CSRES_t + \beta_7 HEEG_t + \beta_8 STOCK_t + \beta_9 RIR_t + \mu_t \quad (2)$$

where:

t = year, 1, … n;

α = constant;

β = regression coefficient;

μ = error term;

+/- = the relationship of the independent variable to the dependent variable: (+) for positive relationship and (-) for negative relationship;

FDI = foreign domestic investment, net inflows (in current US $ million);

GDP = gross domestic product at market prices (in current US $ million);

ROAD = total length of existing national roads of all surface types (in kilometres);

TCOMM = Internet users and mobile cellular subscriptions per 100 people;

WAGE = Real minimum daily wage rate;

NERES = net enrolment rate in public and private elementary and secondary schools (in percent);

CSRES = cohort survival rate in public and private elementary and secondary schools (in percent);

HEEG = total number of higher education enrollees and graduates (in thousands);

STOCK = total value of stocks traded (percent of GDP);

RIR = Real lending interest rate (in percent).

Transforming equation (2) into its log-linear form, the following model is derived:

$$lnFDI_t = \alpha_0 + \beta_1 lnGDP_t + \beta_2 lnROAD_t + \beta_3 lnTCOMM_t - \beta_4 lnWAGE_t + \beta_5 lnNERES_t + \beta_6 lnCSRES_t + \beta_7 lnHEEG_t + \beta_8 lnSTOCK_t + \beta_9 lnRIR_t + \mu_t \quad (3)$$

Adopting a log-linear form improves the specification of the model (Aldaba 1994) by reducing the expected heteroscedasticity (Shah 2014). Log-linearising the equation can also transform a likely non-linear relationship between the dependent variable FDI and the explanatory variables into a linear one (Wei 2005).

Data processing and results

Before proceeding to Multiple Regression Analysis, a multicollinearity test is first performed. A bivariate analysis was performed for all variables using Pearson's r, as set up in the correlation matrix (Table 1).

Table 1. Correlation Matrix

ln / ln	FDI	GDP	ROAD	TCOMM	WAGE	NERES	CSRES	HEEG	STOCK	RIR
FDI	1.000									
GDP	.585**	1.000								
ROAD	.477*	.844**	1.000							
TCOMM	.291	.812**	.719**	1.000						
WAGE	.241	.587**	.659**	.867**	1.000					
NERES	-.038	-.017	.212	-.314	-.063	1.000				
CSRES	.326	.817**	.574*	.774**	.543*	-.176	1.000			
HEEG	.448	.869**	.889**	.877**	.798**	-.057	.737**	1.000		
STOCK	.571*	.345	.237	-.179	-.269	.448	.081	-.002	1.000	
RIR	-.340	-.648**	-.564*	-.635**	-.558*	.144	-.635**	-.619**	-.026	1.000

** Significant at the 0.01 level (2-tailed).

* Significant at the 0.05 level (2-tailed).

Source: Data analysed using SPSS Statistics v22

It was shown that no variables exhibited values greater than 0.9 which was used as the cut-off, indicating that there was little cause to believe in the

existence of multicollinearity. The model was also tested for serial correlation or autocorrelation using the Durbin-Watson test. The computed d-statistic using *SPSS v22* is 2.28 (see Table 2), which is within the desired range of 1.50 to 2.50, indicating that there is little autocorrelation (a perfect value of 2 means that there is no autocorrelation).

The results of the regression are shown in Table 2. Of the nine explanatory variables, seven are found to be statistically significant. These are GDP, ROAD, TCOMM, WAGE, NERES, HEEG and RIR. Only four variables (GDP, ROAD, CSRES, and RIR) adhered to the expected signs of their coefficients. Taken together, all nine independent variables accounted for 78.5% of variations in the net FDI flows received by the Philippines from 1996 to 2014.

Table 2: Ordinary Least Squares Estimates

Variable	Coefficient	Std. Error	t-statistic	p-value	Sign.
Constant	−65.343	52.489	−1.245	.253	
lnGDP	7.194	1.799	3.998	.005	***
lnROAD	11.192	5.850	1.913	.097	*
lnTCOMM	−3.294	.760	−4.333	.003	***
lnWAGE	9.317	2.143	4.347	.003	***
lnNERES	−30.605	6.138	−4.986	.002	***
lnCSRES	9.082	5.377	1.689	.135	
lnHEEG	−9.165	4.167	−2.200	.064	*
lnSTOCK	−0.610	.438	−1.392	.207	
lnRIR	1.233	.395	3.119	.017	**

R^2	.906	Mean dependent variance	7.273
Adjusted R^2	.785	S.D. dependent variance	.740
Durbin-Watson statistic	2.280	S.E. of regression	.343
F-statistic	7.490***	Sum squared residual	.834

*** Significant at the 1 percent level (two-tailed).

** Significant at the 5 percent level (two-tailed).

* Significant at the 10 percent level (two-tailed).

Source: Data analysed using gretl 2016a and SPSS Statistics v22

Market Size (GDP)

The results lend affirmation to the expectation that host market size, as measured by GDP, is strongly and positively correlated to the net FDI inflows into the Philippines from 1996 to 2014, indicating that market size is a strong explanatory variable for the decision of foreign investors to locate their investments

in the country. This relationship is statistically significant at the 1 percent level. The value of the coefficient, which is 7.184, implies that, for every 1 percent increase in GDP (in current US $ million), net FDI inflows (in current US $ million) increase by 7.184 percent. These results are not surprising, as the positive relationship between a country's market size and the FDI flows it attracts is well supported by current theories. Also, the findings of many empirical works confirm the importance of the host market size as one of the more robust determinants of FDI. Moreover, the positive coefficient might imply that FDI in the Philippines is primarily horizontal in nature, i.e. market-seeking FDI.

Infrastructure (ROAD, TCOMM)

The variable ROAD, one of the proxies for the country's infrastructure, is found to be statistically significant at the 10 percent level. Its coefficient of 11.192 has a positive sign, which is consistent with the expectations of this study. Moreover, the value of the coefficient implies that, for every 1 percent increase in total national road length, net FDI inflows increase by 11.192 percent. Existing literature validates this effect. The findings of several studies noted that the effect of infrastructure improvements in drawing FDI inflows is greater in developing economies than in advanced economies where infrastructure availability and quality are already equally high (Walsh–Yu 2010). Moreover, Canning and Fay (1993. 28–29) observed that the rate of return to transportation infrastructure was "very high" in "middle-income countries" where "rapid development" was underway, "normal" for "mature developed economies" and "moderate" for "slow-growing undeveloped countries". The implications of the sign and value of the coefficient attached to the variable ROAD certainly mirror this observation.

Meanwhile, the results for TCOMM, the other proxy for infrastructure, are surprising and unexpected and run contrary to this study's hypothesis that TCOMM, which indicates telecommunications network coverage, is positively correlated to inward FDI flows. While it is highly significant at the 1 percent level, its coefficient bears a negative sign, indicating a negative relationship between TCOMM and net FDI inflows. Its coefficient value of −3.294 implies that, for every 1 percent increase in TCOMM, net FDI inflows actually decrease by 3.294 percent. Admittedly, this result is not expected. However, it is not at all invalid or illogical. In hindsight, while the variable TCOMM reflects the expansion of telecommunications network in the Philippines, *it does not account for the quality of the telecommunications services provided*. Though TCOMM measures the number of Internet users and mobile cellular subscriptions per 100 people, *it does*

not reflect the qualitative characteristics of the actual Internet or mobile cellular services provided. From the start, TCOMM was not intended to gauge rapid Internet speed, or stable Internet connectivity, or steady mobile cellular signals, or other such characteristics indicative of the quality of telecommunications services, things that are more important to foreign investors seeking to make FDI in the country.

Cost of Labour (WAGE)

The proxy WAGE, a measure of the labour cost in the Philippines, is shown to be highly statistically significant at the 1 percent level. However, its coefficient is not consistent with the expected negative sign, implying that there exists a positive relationship between WAGE and net FDI inflows in the Philippines. This means that the rising cost of labour actually attracts more investors to make FDI in the country. In fact, the WAGE coefficient implies that, for every 1 percent increase in WAGE, net FDI inflows increase by 9.317 percent. This result, however, is not unfounded. On the contrary, the review of extant literature revealed that certain theoretical arguments supported and the findings of numerous empirical works validated the thought that there existed a positive relationship between labour costs and inward FDI flows.

Moreover, the positive relationship of wage costs and FDI in the Philippines might suggest a high quality of labour prevailing in the country. Indeed, wage costs appear to capture other indicators of a high-quality labour force available in the country that were possibly not captured by the education-related variables NERES, CSRES and HEEG.

Quality of Labour (NERES, CSRES, HEEG)

The results for education indicators, which are used as proxies for labour quality, are found to be unexpected and certainly perplexing. Both NERES and HEEG, though significant at the 1 percent and 10 percent levels, respectively, are shown to have negative coefficients, implying that both increasing net enrolment rates in the elementary and secondary levels of basic education and total number of higher education enrollees and graduates actually lead to decreasing net FDI inflows. Meanwhile, while CSRES had the hypothesised positive coefficient, it was nevertheless not statistically significant, suggesting that it does not at all account for the decisions of foreign investors to locate their investments in the Philippines. Obviously, these results are counter-intuitive; indeed, they do not only run contrary to this research's expectations, but also against conventional wisdom, theoretical justifications and empirical evidence in the majority of extant

related literature. There are, however, other research studies, like Cheng and Kwan (2000), that yielded the same puzzling results between labour quality and FDI inflows as applied to the Chinese context.

Stock Market Development (STOCK)

The variable STOCK is shown to have a negative coefficient, which runs contrary to this research's hypothesis. It is also found to be statistically insignificant in accounting for the net FDI flows received by the Philippines from 1996 to 2014. The result is, however, consistent with Kucera (2006), which could be the reason why foreign investors engage in FDI rather than pursue investments through the stock market. It might also imply that the stock market in the Philippines requires development, as its negative relationship with FDI might be taken to mean that the enforcement of law and commitment to shareholder protection, all of which are determinants of stock market development (Claessens et al. 2001; World Bank 2014), are simply inadequate.

Real Interest Rate (RIR)

The final variable, RIR, is found to be positively correlated to net FDI inflows and is also statistically significant at the 5 percent level. This positive and significant relationship is congruent with the research's expectations. Moreover, the value of the coefficient implies that a percent change in the real interest rate could lead to a 1.233 percent increase in the net FDI flows. The implications of the coefficient of RIR suggest that foreign investors are motivated to engage in FDI in the Philippines to take advantage of the higher prevailing interest rate relative to their home countries. Since FDI is primarily financed in the home country, foreign investors gain cost advantages in the Philippines and get higher returns for their invested capital.

Conclusions and recommendations

Consistent with a host of prior econometric works, this research has found out that the market size of the Philippine economy, as measured by its gross domestic product, is a highly significant and positive determinant of FDI. Similarly, the transportation infrastructure in the country, indicated by the total length of national roads, is strongly and positively correlated to FDI inflows. The telecommunications infrastructure, as measured by the number of internet users and mobile subscriptions per 100 people in the country, however, is negatively correlated to FDI. Meanwhile, wage costs are positively correlated to FDI inflows. Perhaps the most surprising results are those related to the indicators of labour

quality which either have a significant but negative correlation or a positive but non-significant correlation with FDI. Stock market development, as indicated by the size of the stock market expressed as a percentage of the country's GDP, is negatively correlated and statistically non-significant to FDI. Finally, real interest rate is significantly and positively correlated to FDI inflows.

Based on the results of the study, the area that requires the most attention in terms of improvement is infrastructure. The Philippines is an archipelagic country composed of more than 7100 islands, which makes the physical transport of people, services and goods inherently difficult. The country suffers from an inferior infrastructure system that has long proved detrimental to the country's efforts to attract more significant inflows of the global FDI traffic. Negligible progress has been made despite earlier policy papers (notably, Aldaba 2006, Balboa–Medalla 2006, and Pernia et al. 2005) that highlighted the inadequacy of the country's infrastructure, citing in particular the poor state of road networks. Concerns were raised over the fact that the Philippines had one of the lowest infrastructure investment rates in Southeast Asia, amounting to only 2-3% of its GDP, as opposed to Thailand's 5-6% in the mid-2000s. The said reports also noted that the costs of electricity, Internet and telecommunications services in the Philippines were the highest in the ASEAN region.

The Philippines can look to the experience of the European Union for guidance as it deals with competition and integration issues within ASEAN. As the earlier cited research studies found out, the 28-member bloc's great appeal to foreign investors was largely due to the size and homogeneity of its market as well as to its stable growth. Likewise, high infrastructure investments and efficient labour force brought about by financial and workforce mobility were significant factors in drawing FDI. Other locational considerations were political and legal continuity as well as the stable interest rate environment in the region as a whole. These are important insights for the Philippines to ponder upon as it contemplates its future in the ASEAN trading bloc moving forward.

References

Aldaba, R. 1994. *Foreign direct investment in the Philippines: a reassessment*. Metro Manila: Philippine Institute for Development Studies.

Arcabic, V.–Globan, T.–Raguz, I. 2013. The relationship between the stock market and foreign direct investment in Croatia: evidence from VAR and cointegration analysis. *Financial Theory and Practice* 37*,* 109–126.

Balboa, J.–Medalla, R. 2006. *State of trade of and investments in the Philippines*. Metro Manila: Philippine Institute for Development Studies.

Bangko Sentral ng Pilipinas 2015. *FDI reach all-time high in 2014 at US$ 6.2 billion; Net FDI inflows in December increase more than five-fold.* http://www.bsp.gov.ph/publications/media.asp?id=3679, downloaded: 10.02.2017.

Benacek, V.–Gronicki, M.–Holland, D.–Sass, M. 2000. The determinants and impact of FDI in Central and Eastern Europe: a comparison of survey and econometric evidence. *Transnational Corporations* 9(3), 163–212.

Canning, D.–Fay, M. 1993. *The effect of transportation networks on economic growth*. http://academiccommons.columbia.edu/catalog/ac:99886, downloaded: 15.03.2017.

Cevis, I.–Camurdan, B. 2007. The economic determinants of foreign direct investment in developing countries and transition economies. *The Pakistan Development Review* 46(3), 285–299,

Cheng, L.–Kwan, Y. 2000. What are the determinants of the location of foreign direct investment? The Chinese experience. *Journal of International Economics* 51(2), 379–400.

Claessens, S.–Klingebie, D.–Schmukler, S. 2001. *FDI and stock market development: complements or substitutes?* http://www.iadb.org/WMSFiles/products/research/files/pubS-FDI-4.pdf, downloaded: 30.01.2016.

Cushman, D. 1987. The Effects of Real Wages and Labour Productivity on Foreign Direct Investment. *Southern Economic Journal* 54(1), 174–185.

Denisia, V. 2010. Foreign Direct Investment Theories: An Overview of the Main FDI Theories. *European Journal of Interdisciplinary Studies* 2(2), 104–110.

Dunning, J. H. 2000. The eclectic paradigm as an envelope for economic and business theories of MNE activity. *International Business Review* 9, 163–190.

Faroh, S.–Shen, H. 2015. Impact of interest rates on foreign direct investment: case study Sierra Leone economy. *International Journal of Business Management and Economic Research* 6(1), 124–132.

Feenstra, R.–Hanson, G. 1997. Foreign direct investment and relative wages: Evidence from Mexico's maquiladoras. *Journal of International Economics* 42, 371–393.

Franco, C.–Rentocchini, F.–Marzetti, G. 2008. *Why do firms invest abroad? An analysis of the motives underlying foreign direct investments.* http://www.etsg.org/ETSG2008/Papers/Franco.pdf, downloaded: 02.11.2016.

Fung, K.–Iizaka, H.–Lee, J.–Parker, S. 2000. Determinants of US and Japanese Foreign Direct Investment in China. *Working Paper no. 456*. Santa Cruz, California: University of California at Santa Cruz.

Harrison, A. 1994. *Multinationals in economic development: the benefits of FDI*. https://mpra.ub.uni-muenchen.de/36270/1/MPRA_paper_36270.pdf, downloaded: 03.03.2017.

Helldin, A. 2007. *Regional determinants of foreign direct investment – a study of eastern China. BA Thesis.* Uppsala: University of Uppsala.

Isayev, U. 1998. *Foreign investment during the transition: how to attract it, and how to make the best use of it.* https://www.imf.org/external/np/eu2/kyrgyz/pdf/isayev.pdf, downloaded: 02.11.2016.

Kucera, D. 2006. Core Labour Standards and Foreign Direct Investment: Friends or Foe? The Case of Child Labour. *Review of World Economics* 142(4), 765–791.

Kurihara, Y. 2012. The deterministic elements of FDI to ASEAN countries: the relationship between FDI and macroeconomic variables. *Journal of Management and Sustainability* 2(2), 11–17.

Leitao, N. 2012. Foreign direct investment and globalization. *Actual Problems of Economics* 4, 398–405.

Lim, E. 2001. *Determinants of, and the relation between, foreign direct investment and growth: a summary of the recent literature.* https://www.imf.org/external/pubs/ft/wp/2001/wp01175.pdf, downloaded: 02.11.2016.

Majeed, M.–Ahmad, E. 2008. Human capital development and FDI in developing countries. *Journal of Economic Cooperation* 29(3), 79–104.

Mody, A. 1998. *Foreign Direct Investments and the World Economy*. London: Routledge.

Moran, T. 1999. *Foreign direct investment and development: a reassessment of the evidence and policy implications.* http://www.oecd.org/investment/mne/2089864.pdf, downloaded: 02.11.2016.

Na, L.–Lightfoot, W. 2012. Determinants of foreign direct investment at the regional level in China. *Journal of Technology Management in China* 1(3), 262–278.

Nazir, M.–Nawaz, M.–Gilani, U. 2010. Relationship between economic growth and stock market development. *African Journal of Business Management* 4(16), 3473–3479.

Nonnenberg, M.–Mendonca, M. 2004. *Determinants of direct foreign investment in developing countries.* http://www.anpec.org.br/encontro2004/artigos/A04A061.pdf, downloaded: 12.02.2017.

Penalver, M. 2002. *Globalization, FDI and growth: a regional and country perspective.* http://unpan1.un.org/intradoc/groups/public/documents/un/unpan006429.pdf, downloaded: 12.02.2017.

Pennisi, E. 2012. *The current state of globalization: how connected is the world?* http://globaledge.msu.edu/blog/post/1277/the-current-state-of-globalization-how-connected-is-the-world, downloaded: 12.02.2017.

Pernia, E.–Salas, J.–Sioson, J. M. I. 2005. *Investment climate and regional development in the Philippines. UPSE Discussion Paper No. 2005/01*, Quezon City: University of the Philippines, School of Economics.

Shah, M. 2014. The significance of infrastructure for FDI inflow in developing countries. *Journal of Life Economics* 1(2), 1–16.

Shatz, H.–Venables, A. 2000. The Geography of International Investment. *World Bank Policy Research Working Paper No. 2338.* Washington, D.C.: World Bank.

United Nations Conference on Trade and Development 2015. *World investment report: reforming international investment governance.* http://unctad.org/en/PublicationsLibrary/wir2015en.pdf, downloaded: 02.11.2016.

Walsh, J.–Yu, J. 2010. *Determinants of foreign direct investment: a sectoral and institutional approach.* https://www.imf.org/external/pubs/ft/wp/2010/wp10187.pdf, downloaded: 03.03.2017.

Wei, W. 2005. China and India: any difference in their FDI performances? *Journal of Asian Economics* 16, 719–736.

WEF 2016. *The global competitiveness report 2014-2015: full data edition.* http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport2014-15.pdf, downloaded: 10.02.2017.