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## Looking Beyond the Pandemic: Building Back Better for MSME Finance in Asia and the Pacific

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### **Abstract**

Our paper provides a conceptual overview of what a post-pandemic ecosystem for MSME financing might be, and how policymakers might apply it. Current COVID-19 emergency measures are not sustainable, and fintech and other technologies offer improvements for access to MSME finance in Asia and the Pacific and globally. We address what the future may hold in store.

We propose two lenses, or dimensions, through which to consider the future of MSME finance in Asia and the Pacific. The first is a contextual one, and uses the Japanese notion of *ikigai* to provide a framework by which the future of MSME finance can align with wider sustainability goals, including the growing emphasis on ESG issues. Getting the balance right between the different core competencies of various stakeholders in MSME finance, as well as a shared notion of objectives, will help in creating the right policy agenda.

The second dimension is a transformational one, and uses the image of the *enso* to depict how technological innovations in MSME financial products and services will bring about a change in the way that MSMEs go about accessing finance. For them, it will see financial products and services bundled into other business services that they avail themselves of, rather than as a function of a distinct relationship with one or more banks or traditional financial providers. For those traditional financial providers, the sensation will be more like an ‘unbundling’ of their financial sector ‘department store’ approach, and will see them respond in various ways to this competitive threat.

### **Keywords**

Pandemic, MSME financing, Asia Pacific, Fintech, MSME policy

## **A Comparative Analysis of Safety Orientation and Safety Performance in Organizations: A Project Management Perspective**

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### **Abstract**

Safety is considered as one of the project's success factors, especially in the construction sector. Poor safety management may result in accidents that have an impact on human, economic, and legal issues. Therefore, it is necessary to consider safety and health as a project success factor along with other fundamental project success factors, such as time, cost, and quality. Organizations have a knowledge deficit of implementing long-term safety practices, and due to cost control, safety problems tend to receive the least priority. Professionals usually assume that safety management involves expenditures unrelated to production goals, thereby considering it unnecessary for profitability and competitiveness. The purpose of this study is to introduce, analyze and identify the association between the orientation of the public safety procedures of an organization and the public safety standards applied in the project. Therefore, the authors develop the process and collect the possible mathematical-statistical tools supporting this goal. The result shows that the adoption of management to safety is a significant factor in implementing the safety standard in the project and thereby improving safety performance. It may take time and effort to adopt the mindset of safety orientation service development, but at the same time, the higher organizational investment in safety and health programs will contribute to the loyalty of staff to safety compliance.

### **Keywords**

Project management perspective, safety orientation, safety performance, safety standards

## 1. Introduction

The importance of health and human safety is one of the basics of the everyday life of the individual, the society, and the prevention of occupational diseases, from which the basics of health care emerge. It is concerned for human health and safety as well as the provision of adequate living conditions and the protection of the production elements such as "humans, materials, and machines" from damage and financial losses. With the increasing complexity of our lives, the risks to which humans are exposed have risen substantially. Industrial businesses differ fundamentally from the typical lifestyle in conditions such as temperature, humidity, and the purity of the surrounding environment or its pollution, and the nature of operations. Thus, these areas are more exposed to increased risks and their intensity. These risks have different harmful effects in their form, size, and duration of impact on the participants, including workers, family members, and society as a whole. According to Biggs et al. (2005), manufacturers have a low awareness of the need to establish long-term safety procedures, and safety problems are usually given the least priority due mainly to budget constraints.

For individuals participating in a project, project success is usually considered as the fulfillment of certain pre-determined project goals, which commonly encompass several factors such as time, cost, performance, quality, and safety (Chan et al., 2002; Lim & Mohamed, 1999). Work accidents cause delays in project completion due to missed working hours at the project level. Furthermore, another significant effect is a reduction in the quality of human life (Aksorn & Hadikusumo, 2008). Therefore, working successfully to enhance rules or laws related to occupational safety management systems is one way to prevent an accident. Safety standards are in place for the use of material handling equipment, the overall health and well-being of team members, and how to respond in the event of an emergency. These standards allow team members to make choices in the best interest of everyone in the building. This study aims to identify the association between the orientation of the public safety procedures of an organization and the public safety standards applied to the project using statistical analysis.

## 2. Safety Standard, Orientation, and Performance of an Organization

After the success of the quality management (ISO 9001) and environmental management (ISO 14001) standards, and in response to the needs for an occupational health and safety management model that organizations can easily implement with these two standards and that offers them the option of assessing and certifying their management system in this area, the occupational health and safety management was developed (Vinodkumar & Bhasi, 2011). The US Occupational Health and Safety Administration published the Occupational Health and Safety Assessment Series (OHSAS 18001:1999). This standard is intended to assist and enhance the systematization of risk factor management and the development of appropriate working conditions. It also intends to establish a safe and healthy working condition, as well as to ensure and maintain the workers health. OHSAS 18001 was constructed to be compatible with ISO 9000 and ISO 14000 management system standards, facilitating the integration of quality, environmental, and occupational health and safety management systems in businesses. Safety Standards outline the essential concepts, standards, and regulations for nuclear safety. They serve as a global standard for securing people and the environment, and they help provide a globally harmonized high degree of safety. It includes actions such as

radiation therapy, nuclear power plant operations, and the production, transportation, and use of radioactive materials. and the management of radioactive waste (IAEA.org).

OHSAS 18001 promotes and contributes to systematizing proper management of the risk faced by workers through adequate working conditions. In contrast, inadequate working conditions have negative effects on the organization on two dimensions: reduced efficiency, with negative effects on productivity, affecting the organization's financial situation, and an increase in workplace accidents and injuries, leading to increased costs to both the organization and its society of insertion (Kristjuhan & Kalle, 2000).

The decision to implement safety requirements into the standard is often based on the knowledge, experience, and insight of the technical expert engaged in developing the body of the safety standard comprised of those requirements or specifications. This is generally done without considering the risk characteristics or factors addressed by each safety requirement that makes up a safety standard (Aly et al., 2021). Implementing OHSAS 18001 is simply the first step toward managing safety work in a structured and successful manner; it is not a panacea for all safety issues (CM et al., 2001). Organizations must have a positive health and safety atmosphere, such as an effective management commitment with the support of their staff, to be able to utilize this tool to properly manage their production processes and seek to reach the goal of zero incidents for all parties concerned. However, the use of safety standards may not always have the desired effect on safety, as the application of safety standards for some measures can lead to lower investments in safety measures that are not affected by the standards. The safety standards may lead to a decrease in overall safety if the limitations are sufficiently stringent (Abrahamsen et al., 2013).

Health and Safety Orientation is an essential part of every organization's health and safety management system. It is the process of introducing new, inexperienced, transferred, and returning employees to a safe and healthy workplace. Orientation provides workers with the essential safety details regarding their job and tasks, informing them of particular specifics about workplace risks, and offers an opportunity for them to ask questions and to clarify unfamiliar or unclear information. Orientation isn't supposed to be a chore. It's an employee's initial impression of the management system and the general work environment. Any new employee will have expectations about the workplace environment, and the importance placed on their safety orientation will be reflected in their job performance, enthusiasm to learn, and ability to contribute to a safe and healthy work environment. Therefore, orientation should not be a flurry of checklists and safety documents delivered to the new employee, but rather should be practical, focusing on the skills the individual needs to be successful in their job (WorkSafeNB, 2011).

Safety performance in a project is equally as important as time, quality, and cost in determining project success (Hasan & Jha, 2013). Venkataraman (2015) illustrated that organization strength and success are determined by how well it manages safety, productivity, quality, health, and the environment, in addition to marketing and finance. Jitwasinkul and Hadikusumo (2011) revealed that clients should expand their concern to promote site safety concerning the significance of human beings when it comes to project execution, rather than focusing just on time, cost, and quality as performance criteria. Nevertheless, Safety is considered a secondary issue. The lack of incentive to develop a safety culture at both the

organizational and project levels has led to an inadequate safety record overall, with construction being one of the most dangerous sectors globally (Harper & Koehn, 1998; Sawacha et al., 1999).

Wong et al. (1999) pointed that safety performance is influenced by safety practices and procedures, as well as the development of site-level safety committees, communication of safety policies to site workers, participation of safety officers, and contact between site staff and safety officers. According to the Construction Industry Institute of the United States, Pre-project/pre-task safety planning, safety orientation and training, and written safety incentives are the most effective safety approaches for projects (Hinze & Wilson, 2000). The performance approach to employee safety and health is implementing a safety standard, regulation, or rule to achieve preset, generally defined goals, purposes, or targets (user requirements) without specifying the particular technical requirements or procedures for doing so (Haupt, 2001). The approach engages all stakeholders in the safety and health endeavor, including owners, clients, and staff.

Zohar (1980) revealed that the commitment of management to safety has a significant impact on the efficacy of internal control and the success of an organization's safety management system. Clearly, management is the key that allows safety performance improvements to occur in organizations (Freda et al., 1999; J. Hinze, 1997). Therefore, safety has to become a strategic choice within an organization to improve their competitiveness and achieve a favorable position in today's global marketplace. Safety performance may be improved by improving organizational structure, organizational relevance of safety, safety responsibility and accountability, communication, management attitude, employee participation, and employee reactions and behavior (Erickson, 2000). Moreover, the importance of management's involvement and commitment to supporting the organization's safety and health efforts must be well documented (Hinze, 1997; Levitt & Samelson, 1993). Effective communication and information transmission between management and staff will result in higher safety standards and more compliance with safety rules (Holt, 2001).

Fernández-Muñiz et al. (2012) provide empirical support for two variables (direct communication and indirect management commitment) and three outcomes (safety performance, employee satisfaction, and organization competitiveness) of safety behavior in OHSAS 18001-certified organizations. Safety culture is a type of organizational culture in which the beliefs and values are focused on health and safety (Clarke, 2006). Thus, an organization's safety culture is based on the safety commitment of its management and workers to its safety initiatives and campaigns.

Håvold (2005) illustrated that organizations with a strong safety orientation have an awareness of the significance of health and safety, as well as belief in the efficiency of preventive measures in creating the required behavior for avoiding/limiting accidents and continually improving health and safety. It was found that organizations with certification have an adequate safety management system in place to control occupational risk and have higher levels of management commitment, safety training, worker involvement in safety, safety communication and feedback, safety rules and procedures, safety promotion policies, and safety behavior than non-certified organizations (Chang & Liang, 2009; Vinodkumar & Bhasi, 2011). Moreover, benefits are also expected to arise at the level of product compliance

and conformance, resulting in customer satisfaction and a reduction of waste materials, with the related environmental benefits. As a consequence, any organizations who want to create a formal method to decrease the health and safety hazards to their workers, customers, and the general public on their premises can use the OHSAS 18001 (Vinodkumar & Bhasi, 2011).

### 3. Data Analysis

We performed a questionnaire survey to answer the research questions, which resulted in 114 replies, 111 of which can be used for research purposes. The data was collected from early November 2019 until early March 2020. The current study is primarily exploratory, with an unidentified population as a focus. Snowball sampling of nonprobability samples was used as the sampling method. The Statistical Program for Social Sciences (SPSS) software package was used for the statistical analysis. Descriptive statistical analysis of the answers reveals that we were able to reach a wide variety of organizations, from small and medium-sized to large, and from small projects of 1-9 employees to major projects employing more than 250 people. Table 1 shows the descriptive statistics for the questions related to safety.

*Table 1: Descriptive Statistics*

		Is there a general orientation to work and attention to public safety procedure	Were there public safety standards applied to the project	Did the project meet the safety requirements
<b>N</b>	Valid	111	111	111
	Missing	3	3	3
<b>Mean</b>		1.50	2.08	2.97
<b>Median</b>		1.00	2.00	3.00
<b>Mode</b>		1	2	3
<b>Std. Deviation</b>		.749	.752	.756
<b>Variance</b>		.561	.566	.572
<b>Minimum</b>		1	1	1
<b>Maximum</b>		3	3	4
<b>Percentiles</b>	25	1.00	2.00	3.00
	50	1.00	2.00	3.00
	75	2.00	3.00	3.00

Table 2 shows that 65.8% of organizations have an orientation to work and attention to public safety standards, while 18.9% of organizations don't have any orientation to the safety procedure. This indicates that organizations have sufficient awareness of safety and public health orientation which have a positive impact on employee satisfaction and the workplace environment.

Table 2: Is there a general orientation to work and attention to public safety procedure

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	Yes.	73	64.0	65.8	65.8
	No.	21	18.4	18.9	84.7
	I don't know.	17	14.9	15.3	100.0
	<b>Total</b>	<b>111</b>	<b>97.4</b>	<b>100.0</b>	
<b>Missing</b>	System	3	2.6		
<b>Total</b>		<b>114</b>	<b>100.0</b>		

Table 3 and Table 4 highlighted the performance of safety standards in projects. On the one hand, it shows that 24.3% of the projects have applied the safety standards, while 43.2% of them didn't apply them. As a result, there are conflicts in applying the standards in the projects. That's because professionals usually assume that safety management involves expenditures unrelated to production goals, thereby considering it unnecessary for profitability and competitiveness. Moreover, one of the biggest difficulties in implementing safety standards is a lack of commitment to health and safety. Commitment to safety is dependent on the level of awareness toward safety, which influences their prioritization. A low commitment on safety leads to a weak safety culture. On the other hand, 67.6% of the project met the safety requirements, while 5.4% of the projects missed the safety requirements. It also indicates that many organizations have an orientation to public safety, but they didn't apply the standard effectively in the projects.

Table 3: Were there public safety standards applied to the project

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	Yes.	27	23.7	24.3	24.3
	No.	48	42.1	43.2	67.6
	I don't know.	36	31.6	32.4	100.0
	<b>Total</b>	<b>111</b>	<b>97.4</b>	<b>100.0</b>	
<b>Missing</b>	System	3	2.6		
<b>Total</b>		<b>114</b>	<b>100.0</b>		

Table 4: Did the project meet the safety requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
<b>Valid</b>	Over requirements.	9	7.9	8.1	8.1
	Missed requirements.	6	5.3	5.4	13.5
	Met requirements.	75	65.8	67.6	81.1
	I don't know.	21	18.4	18.9	100.0
	<b>Total</b>	<b>111</b>	<b>97.4</b>	<b>100.0</b>	
<b>Missing</b>	System	3	2.6		
<b>Total</b>		<b>114</b>	<b>100.0</b>		

In Table 5, the value of the chi-square statistic between the organization orientation and the safety standards is 35.385, and the *p*-value appears in the same row in the "Asymptotic Significance (2-sided)" column 0.000. This indicates that the result is significant since the value

is less than the designated alpha level (normally 0.05). According to Table 6., there is a weak relationship between orientation and safety standards. This means that the two variables are not correlated, but statistically significant relationship between them since alpha values are less than 0.05.

Table 5: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
<b>Pearson Chi-Square</b>	35.385 <sup>a</sup>	4	.000
<b>Likelihood Ratio</b>	40.620	4	.000
<b>Linear-by-Linear Association</b>	4.499	1	.034
<b>N of Valid Cases</b>	111		

<sup>a</sup> Only one cell (11.1%) has an expected count less than 5. The minimum expected count is 4.14.

Table 6: Correlations

		Is there a general orientation to work and attention to public safety procedure	Were there public safety standards applied to the project	Did the project meet the safety requirements
<b>Is there a general orientation to work and attention to public safety procedure</b>	Pearson	1	.202*	.248**
	Correlation			
	Sig. (2-tailed)		.033	.009
<b>Were there public safety standards applied on the project</b>	N	111	111	111
	Pearson	.202*	1	.212*
	Correlation			
<b>Did the project meet the safety requirements</b>	Sig. (2-tailed)	.033	.026	
	N	111	111	111
	Pearson	.248**	.212*	1
	Correlation			
	Sig. (2-tailed)	.009	.026	
	N	111	111	111

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

#### 4. Conclusion

Regulations and safety standards play a significant role in the prevention of accidents and injuries. However, developing standards and regulations that are both efficient and effective while remaining easy enough for duty holders to follow is a big challenge. The paper attempted to identify and underline the relationship that links the orientation of the public safety procedures of an organization and the public safety standards applied in the project. In simple words, the study showed that many organizations have an orientation to public safety, but they didn't apply the safety standards in the project effectively. Moreover, we found that there is a weak relationship between orientation and safety standards. This means that the orientation and applying the standards are not correlated, but they are statistically significant correlations between them.

## 5. Further Research

The establishment of a management system focusing on concerns relating to workers occupational health and safety may provide several benefits to an organization. For example, increasing worker job satisfaction may result in increased productivity, which might indicate higher efficiency and financial income for the organization. Therefore, an adequate occupational health and safety management would have a beneficial impact on shareholder interest and, as a result, on the organization's suppliers, given the business opportunities. Further research using multilevel analysis might identify the degree of influence of safety orientation and applying the safety standards exerted by individual people or by organizations on organizations profitability

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## **The Tourism Industry as an Attractive Employer in a Cross-Border Context: Status Quo and Development Potentials**

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### **Abstract**

Offering services and selling interpersonal experiences underline the tourism industries dependence on qualified workforce. The need for research dealing with human resources, such as employer attractiveness and employee's needs has been highlighted in recent literature. Nonetheless, there is a lack of research, especially in distinctive cultural contexts. The aim of the study was to analyze success factors for tourism organizations to increase the attractiveness of the industry in general by considering the perspectives of various tourism stakeholders. Seven focus group interviews with 50 participants have been conducted to get insights from perspectives of authorities (e.g. chamber of commerce, tourism associations etc.), managers of tourism schools and employees (students, job seeking employees and working employees) in Bavaria, Salzburg and Tyrol. The theory-based interview guide (grounded on the two-factor theory by Herzberg et al. (1959) focused on categories related to respondents' associations with employer attractiveness in tourism settings, their expectations of an attractive employer and factors that would motivate employees to apply for positions in tourism companies. The results show that employees in general expect support, trust, respect and recognition from supervisors. Generation Z in particular perceive companies as attractive workplaces, if management shows appreciative behavior toward employees, if it is possible to discuss with superiors at eye level and if a work-life balance is made possible. In addition, the study identifies other clusters (e.g. corporate culture, meaning of the job, etc.) and offers solutions to make the tourism industry more attractive.

### **Keywords**

Employer attractiveness, employer branding, tourism, two-factor theory

## **The Benefits of a SEO Strategy in a SEA Campaign – The Strength of Search Engine Marketing**

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### **Abstract**

This research aims to understand what SEO influences a company that already has a SEA strategy. Analyzing the consequences of CPC paid by a company to the search engine by each consumer's click on the ad, as well as analyze the consequences verified at the level of CTR. When a user performs an Internet search introducing a keyword in the specific place about what he is looking for he gets two lists of results: organic and sponsored ads. Search Engine Marketing is therefore a relatively current technique of digital marketing which involves the website's position in the search results ranking, in order to be easily found by those searching for a certain theme or product. SEA ads are visible for various types of searches performed by segments for specific customers - companies have to select the most suitable keywords and bid against competitors, with the ultimate goal of winning the auction by making their ads appear at the top of the search results. SEA is currently more effective than all traditional forms of advertising. SEO is, unlike SEA, the strategy that aims to improve site ranking without sponsoring content, that is, companies try to drive traffic to their site only through strategies, such as optimizing target tags, site content or types of keywords. The results In the companies that started the SEO strategy, regarding the decrease in the CPC are quite clear, although regarding CTR, the results are satisfactory but not conclusive. Our results confirmed the literature that supported the thesis approach.

### **Keywords**

Digital marketing, SEO, SEA, search engines

## Measuring Country Image and Its Impact on Behavioral Intentions for Travelling

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### Abstract

Theoretically grounded on the country of origin (COO) and destination branding literature, we hypothesize that cognitive country image (CCI) and country personality (CP) are antecedents of affective country image (ACI) which, in turn, affects consumers' behavioral intentions (BI) towards a scrutinized country. CCI is also hypothesized as having a direct influence on the dependent variable. A quota sample of 685 valid responses from Brazilians from São Paulo and Bahia states was analyzed. Portugal was chosen for stimulus country and the questionnaire was delivered in Portuguese for Brazilians. Structural equation modeling suggests that CP has no direct influence on BI to visit when ACI is in the model, meaning a full mediation effect of the ACI in the relationship. The CCI factors (environment/landscape and people) have shown either direct or indirect influence on BI. Agreeableness, assiduousness and snobbism are important in driving emotional connections and emotions are important drivers for BI. Environmental beliefs are relevant both for emotions and for driving BI. Beliefs about local people had a direct but reverse performance on the outcome according to the hypothesized, meaning that the higher the quality of life, wealth, level of education, and technological advance, the lower the intentional behavior of individuals to visit a particular country. The main results empirically demonstrate statistical significance and validate the integrated model and the different paths, specifically the links of CP → ACI → BI. In the same vein the path links of CCI → ACI → BI have been partially confirmed, as well as the path CCI → BI.

### Keywords

Country image, country personality, behavioral intentions, Portugal, Brazil

## 1. Introduction

### *Context for the empirical research and focus*

The successful attribution of distinct personalities to countries and the addition of brand identities, such countries as South Africa, modern and friendly (Stokburger-Sauer, 2011); Ireland, the “Celtic Tiger” metaphor (Murphy, 2000); and Spain, fresher, free and competitive (Gilmore, 2002) is a fact. However, these are mainly based on nation brand campaigns that have tried to evoke emotional connections (Stokburger-Sauer, 2011; Prayag, 2007).

Balabanis *et al.* (2002) have suggested to incorporate consumers’ characteristics such as experience in relation to a country, cultural values, social norms and demographics (Heslop L. A., Papadopoulos, Dowdles, Wall, & Compeau, 2004). The individual's identification with a country, as a result of their conduct citizenship results in the modulation of important behavioral activation, and indeed there is some evidence that the congruence between the individual personality and the perceived personality of the entity promotes country identification (Stokburger-Sauer, 2011; Bergami & Bagozzi, 2000).

Thus, considering that individuals develop and enhance their social identity, and that represents a starting point for what we may describe as the personality of the individual, then it can be considered an antecedent in the decision-making process (Fournier, 1998) (Stokburger-Sauer, 2011).

According to Anholt (2009), places, such as countries in a wider sense cannot construct or manipulate image with the help of advertising or public relations, slogans or logos. Every country has a scattered image next to international consumers (Moya & Jain, 2013). As such, it can be argued that people are therefore more likely to form organized mental representations of countries, in much the same way they do with other inanimate objects (e.g. Brands).

It has been argued that a distinctive country personality contributes to country differentiation, increases country preference, enhances and builds strong emotional relationships between consumers and countries, resulting in greater trust and loyalty (Fournier, 1998; Aaker, 1996). Therefore, studying and understanding the key elements of country images and aggregating those in a wider framework can be helpful to manage existing images (repair damage caused by negative events, project desirable images).

## 2. Literature Review and Hypotheses Statement

Country’ image, similarly to the destination image construct is seen as a multidimensional concept just like other images, (Baloglu & McCleary, 1999; Beerli & Martin, 2004). Cognitive country image can be seen as the complete set of descriptive, inferential and informational beliefs about a country (Martin & Eroglu, 1993, p. 193); affective country image captures the consumers’ emotional connections to the country (Verlegh, Benedict, & Steenkamp, 1999); country personality captures the human-like characteristics of a country (d' Astous & Boujbel, 2007); behavioral intentions symbolize the attitudinal possibility of a consequent behavior

(Ajzen & Fishbein, 1980) and behavioral intentions to visit, are associated with the individual's future-oriented desired act (Soderlund & Ohman, 2003).

### 2.1. Cognitive country image

Regarding the operationalization of the cognitive component, according to Roth & Diamantopoulos (2008), country beliefs may be based on the dimensions usually cited in the literature, which include a facet of the country itself (i.e. economy, politics, culture, technology, landscape / environment and climate) and a facet more related to the country's people (usually based on factors / items such as competence, creativity, quality of life, education and work). A similar approach was adopted in the context of the existing research. Two factors were used, the *people* dimension and the *environment* dimension to express the cognitive country image.

The standard learning hierarchy models refer to country image as resulting from the influence of cognitive image on affective image, and that follows the theory of reasoned action (Fishbein & Ajzen, 1975); this implies that an individual first form a set of beliefs about a particular country, accumulating knowledge about its relevant attributes, including such criteria as the political system of a country or the landscape environment.

Subsequently, the individual takes it as the basis of beliefs to develop feelings about that country; then the person becomes involved in a relevant behavior, such as visiting the country or buying products from that country. The standard hierarchy of learning assumes that the consumer is highly involved in making his/her decision (i.e., the person is motivated to seek a lot of information, considering various alternatives, and at the end of the process, he/she searches out a carefully measured decision (Solomon, Bamossy, Askegaard, & Hogg, 2009). This was adopted here and thus cognition is proposed as an antecedent of affection.

Thus:

H4.1a and H4.1b: (a) The *environment*; (b) *people* dimension of cognitive country image has a positive impact on the affective country image.

H4.2a and H4.2b: The (a) *environment*; (b) *people* dimension of cognitive country image has a positive impact on behavioral intentions to visit the country.

Although, there still are scarce studies modeling beliefs and country's affections separately (Brijs, 2006) (Heslop L. A., Papadopoulos, Dowdles, Wall, & Compeau, 2004) (Verlegh, Benedict, & Steenkamp, 1999) evaluating their impact on individuals' behavioral intention; this kind of approach still a first step in showing country image formation. Roth & Diamantopoulos (2008, p. 45) illustrated this kind of models, and I followed the reasoning behind those as the baseline for the current research.

### 2.2. Affective country image

The affective component of country image represents consumers' feelings toward a country and becomes operational during the evaluation stage of the selection process (Wang & Hsu,

2010; Gartner, 1993). According to Brijs (2006), Heslop *et al.* (2008), and Orbaiz & Papadopoulos (2003) the affective component of a country's image have the largest and fastest effects on consumers' purchase intentions when compared to cognitive elements (Maher & Carter, 2011). Affection is more effective for persuasive appeals than cognition (Drolet & Aaker, 2002).

The satisfaction of emotional needs is also mentioned as a goal in tourism marketing (Chen & Phou, 2013). According to the affect's theory the structures of individual's prior knowledge such as expectations and personality factors partially determine their affective reactions (Chen & Phou, 2013, p. 271; Besser & Shackelford, 2007). Besser & Shackelford (2007, p. 1334) linked affections to the affective expectations, and found that emotions are associated with the individual's prediction of how he/she will feel in a given context.

Thus:

H4.3: The affective country image has a positive impact on behavioral intentions to visit.

The outcomes of the concept of country image were mainly redirected to product beliefs (Roth & Diamantopoulos, 2009) and purchase intentions (Han & Terpstra, 1988) (Knight & Calantone, 2000) (Heslop L. A., Papadopoulos, Dowdles, Wall, & Compeau, 2004). Only a few focused in exploring the direct and indirect impact on the consumers' behavioral intentions, especially in connection with country image perceptions, focusing on its cognitive and affective components. Also, the mediating role of affective country image on outcome variable has not yet been investigated in the way and in the context, the current study proposes.

According to Fournier (1998) the stronger the emotional relationships between consumers and brands the greater the trust and loyalty illustrated. Thus, I propose to include emotional links as an important antecedent for behavioral intentions as well as being a component of the country image concept. Accordingly, to the major references (Roth & Diamantopoulos, 2008), the affective country image is treated as a mediator variable. This approach was adopted.

H4.4: The affective country image mediates the relationship between the cognitive country image dimensions and the behavioral intentions to visit the country.

### **2.3. Country personality**

The conceptual roots of the country personality construct refer to the individual's tendency to associate human-like characteristics to animals and to nonhuman entities (Kiesler, 2006, p. 149). In this context, individuals need to anthropomorphize objects in order to facilitate their interactions with the non-material world (Fournier, 1998).

Some research studies in tourism and within the country of origin have paid attention to a personified approach towards countries (Chao & Rajendran, 1993; Nebenzahl, Jaffe, & Usunier, 2003). This approach has led the authors d'Astous and Boujbel (2007) to develop a specific country personality scale. The scale shows that human personality traits include

universal representations, easily activated due to prior knowledge, especially their use in humans in particular or in more general contexts or environments, to predict peoples' behavior. These authors proposed a scale personification of countries to qualify and to measure country image as a symbolic component. Country personality captures both the positive and the negative perceived traits of a country:

The main dimensions of positive traits are:

- *Agreeableness* (Goldberg, 1992; Costa & McCrae, 1992); (Heslop *et al.*, 2004) and (Heslop, Papadopoulos, & Bamossy, 1993, p. 199)
- *Assiduousness* – is comparable to “conscientiousness” - which is associated with efficacy and rule conscious (Goldberg, 1990); it is related to the people' competence (Heslop *et al.*, 2004).
- *Conformity* – comparable to “openness to experience” (Goldberg, 1990).

The negative or unfavorable personality dimensions are:

- *Snobbism* – it is expected that *snobbism* has a negative influence on the country evaluation. The scale includes items such as “snobbish”, “haughty”, “chauvinist” and “mannered”, and once a country has a high score on this dimension, is likely to be perceived as arrogant or snob - resulting in unfavorable perceptions (Nebenzahl, Jaffe, & Usunier, 2003)
- *Unobtrusiveness* – is related to the perceived disability of a country to self-protect (guard, defend, protect itself), contrasting to *snobbism* which evoke more negative associations due to their unpleasant features/characteristics (Geuens, Weijters, & De Wulf, 2009).

Ekinci & Hosany's (2006) found a significant relationship between destination personality, emotions and cognitions; they allude to a distinctive and emotionally attractive destination personality, as resulting as the perceived cognitive image of a destination. Assuming the close ties between destination personality and country personality's reference is made to a direct relationship between country personality and the affective country image as well, considering the affective link as a consequence of the perceived country personality.

Therefore:

H4.5a; H4.5b and H4.5c: (a) Agreeableness; (b) Assiduousness; (c) Conformity has a positive impact on affective country image.

H4.6a and H4.6b: (a) Snobbism; (b) Unobtrusiveness has a negative impact on affective country image.

According to consumer behavior and personality literature, an established personality influences consumer preference (Sirgy, 1982; Ekinci & Hosany, 2006; d' Astous & Boujbel, 2007). Also, the tourism and country of origin literature used outcomes such as consumer's behavioral intentions to purchase/buy (Knight & Calantone, 2000), or intentions to visit (Um & Crompton, 1990). Similarly, using the behavioral intentions to visit a specific country as a setting, this article aims to contribute to the evolution of the debate on country personality, country's image, to deepen the study of behavioral intentions, and contribute to the study of the inter-relationships between all of these constructs.

## 2.4. Behavioral intentions

Behavioral intentions symbolize a high attitudinal possibility of consequent behaviors and are expected to reproduce consumer loyalty as truthful predictors (Ajzen & Fishbein, 1980). In that vein, it can be concluded that an act should exist to be evaluated and to predict intentions (Soderlund & Ohman, 2003). Hence, the same researchers introduced the sense of ownership/property in order to explore and explain the link between evaluative judgments and intentions (p. 54). I have applied this concept in the context of behavioral intentions to visit (travel) to a given country.

Thus:

H4.7: The affective country image mediates the relationship between country personality dimensions and the behavioral intentions to visit a country.

According to Lee and Lijia (2012) the attainment of loyalty is often estimated by the actual behavior whereas, behavioral intentions are straightforward predictors of social behaviors. This statement helps and reinforces the current study outcome choice.

There are many studies about the formation and conceptualization of a tourist destination image as it is closer to the current research (Beerli & Martin, 2004; Baloglu & McCleary, 1999; Canally, 2010; Chen & Phou, 2013; Chew & Jahari, 2014; Ekinci, Sirakaya-Turk, & Baloglu, 2007; d' Astous & Boujbel, 2007). Studies employing behavioral intentions - which include the preference for a destination, intention of visiting, satisfaction, and repeat visitation - are usually seen as the result of a positive feedback toward the destination. In short, there is more work inherent toward the intrinsic image concept and less to the behavioral effects of the concept on tourism destination image (Elliot, 2007).

## 2.5. Integrated research model

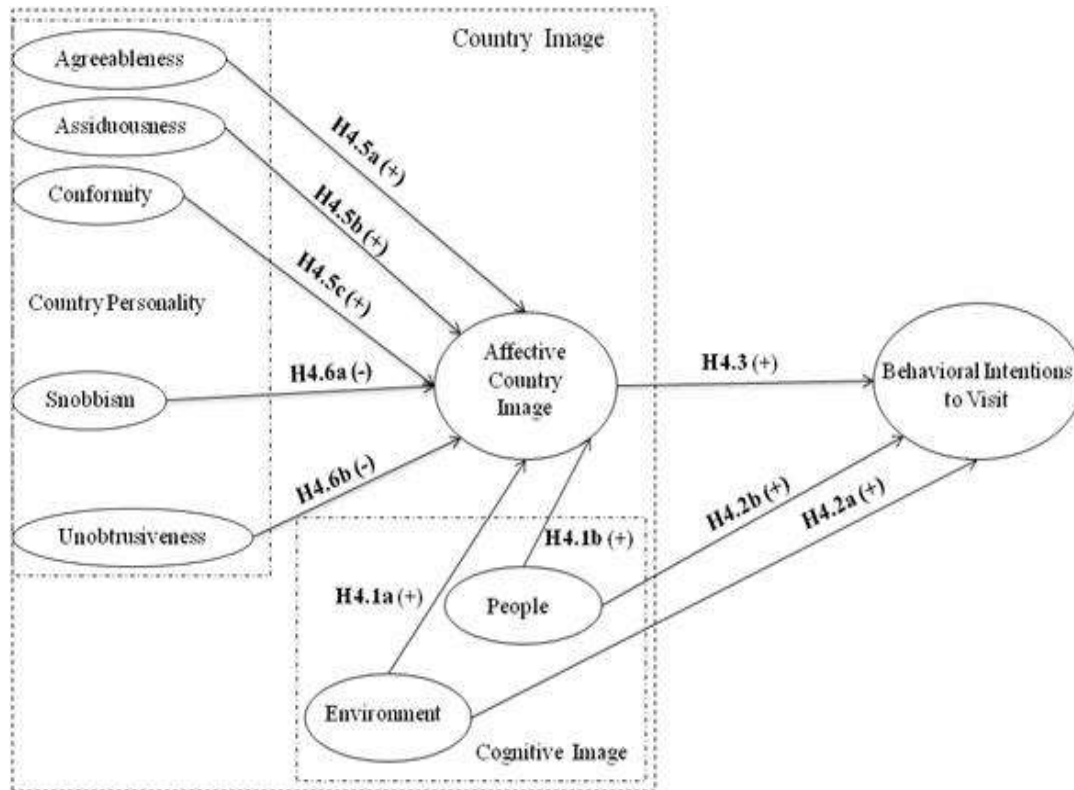
Figure 1 displays the proposed research model to be the baseline of the empirical research, to test the relationship between the independent variables represented by: (a) five *country personality dimensions*; (b) two *cognitive country image dimensions* (*environment*, and *people*), hypothesized as having a positive influence on the mediation variable and on the dependent variable; the mediating variable is represented by the *affective country image*; and the dependent variable is represented by *behavioral intentions to visit*.

The focus is on the interrelationships between related images and not on a thorough analysis of each construct. Specifically, affective country image is hypothesized as a consequence of the country personality and cognitive country image dimensions (treated as independent variables) and it is hypothesized (mediating variable) as the antecedent of behavioral intentions to visit (treated as the dependent variable).

The references came from the usage of similar constructs on behavioral intentions in tourism e.g.: Um & Crompton (1990); d' Astous & Boujbel (2007); Heslop *et al.* (2004); Brijs (2006); Lee & Lijia (2012); Nebenzahl, Jaffe, & Usunier (2003); Knight & Calantone (2000); Roth &

Diamantopoulos (2008) and Roth & Diamantopoulos (2009). As intentions appear to be at a lower level of abstraction, meaning, closer to the observable behavior than cognition or affect, thus by itself behavioral intentions can be considered a dependent variable (Bagozzi & Burnkrant, 1979, p. 914).

Figure 1: Hypothesized integrated research model



### 3. Methodology

The proposed research method consists of four major steps. First, existing scales were adapted to the research settings and country considered in the study. Second, the constructs and scale's reliability and validity were tested. Third, the hypothesized model was estimated using AMOS. Fourth, the potentially positive and negative impact of country personality dimensions, the positive influence of the cognitive country image factors, and the mediation effect of the affective country image factor on behavioral intentions to visit were tested using SEM.

Similarly, to the previous studies included in the current thesis, except for the pretest, a quota sample of 685 valid respondents from Brazil was analyzed, Portugal was chosen as the country for scrutiny and the questionnaire was delivered in Portuguese for Brazilians. Three criteria guided the choice of the stimulus country: (1) historical affinity and common language, (2) the geographic distance, and (3) economic and demographic diversity. The study was conducted in two Brazilian states - São Paulo and Bahia.

The scale and the items were adopted, translated and adapted from Parameswaran and Pisharodi (1994), Heslop, Lu and Cray (2008) and Lee and Lijia (2012) studies.

#### 4. Data Analysis

The empirical data were taken from the main sample. The Statistical Package for Social Sciences (SPSS®) was used to generate descriptive and inferential statistics, and Analysis of Moments Structure (AMOS®) software was used for carrying out the structural equation modeling (SEM).

##### 4.1. Descriptive statistics (cognitive and affective items)

The majority of the respondents perceived Portugal with a very positive cognitive country image (see Table 1). The cognitive country image items with highest mean frequencies were “lots of history, culture and arts” (4.41), followed by “attractive landscapes” (4.33) and by “attractions with high quality” (3.90), all these items belong to the environment factor.

Table 1: Descriptive statistics of the cognitive country image

Description		Mean	Std.Deviation
Environment factor	Q1_1 - a little history, culture and art : lots of history, culture and art	4.41	0.851
	Q1_2 - attractions of low quality : attractions with high quality	3.90	0.928
	Q1_3 - it is a very expensive country for what it offers : it is a country that has good prices for what it offers	3.74	1.014
	Q1_4 - not attractive landscapes : attractive landscapes	4.33	0.889
People factor	Q1_5 - low quality of life : high quality of life	3.63	0.846
	Q1_6 - poor : rich	3.16	0.823
	Q1_7 - people with low level of education : people with high level of education	3.70	0.874
	Q1_8 - not technologically advanced : technologically advanced	3.15	0.889

N=685

Based on the frequency analysis, specifically about the cognitive country image dimensions, 87.2% of the respondents perceived Portugal as a country with lots of history, culture and arts (marked 4 or 5 in the 1 to 5-point scale). In contrast, 34.6% of the participants perceived Portugal as a not technologically advanced country (marked 4 or 5).

Thus, according to the respondents' evaluation it is possible to say that Portugal is mostly seen by Brazilians from São Paulo and Bahia states as a country with a lot of history, culture and arts, with attractive scenery and high-quality attractions, however, not technologically advanced. The affective component of the image of Portugal is assessed as being very positive, since three of the five items measuring the construct obtained values above 4.0 on a scale 1-5. The results show that studied Brazilian population like Portugal indeed. The next subsections present the data analyses of the standalone constructs and finish with the analysis of the integrated hypothesized model.

## 4.2. Exploratory factor analysis and reliability

### Cognitive country image data analysis

The eight-item scale proposed for measuring the cognitive components of the country image were subject to an exploratory factor analysis (EFA) using the principal component analysis (PCA) method. The resulting two-factor structure (with four items each) was reliable with the expected item-factor (Roth & Diamantopoulos, 2008) pattern: the first factor is related to the country itself and is similar to the one defined by Lee & Lijia (2012, p. 7). The second factor is related to the country's people. The two factors were named as *environment and people* (see Table 2).

A KMO value of 0.848 shows a good adequacy of the sample, and the two extracted components explain almost 60% of the total variance with all communalities ranging from 0.523 to 0.657. Both cognitive country image components demonstrate good internal consistency, with Cronbach's alphas of 0.753 and 0.766 (see Table 2).

Table 2: Factorial structure of the cognitive country image construct

Rotated Component Matrix <sup>a</sup>			
	Component		Communalities
	1 (People)	2 (Environment)	
Q1_1 "A little history, culture and art: Lots of history, culture and art "		0.743	0.617
Q1_2 "Attractions of low quality: Attractions High Quality"		0.725	0.657
Q1_3 "It is a very expensive country for what it offers: It is a country that has good prices for what it offers"		0.723	0.523
Q1_4 "Not attractive Landscapes: Attractive Landscapes"		0.722	0.560
Q1_5 "Low quality of life: High quality of life"	0.702		0.589
Q1_6 "Poor: Rich"	0.803		0.655
Q1_7 "People with low level of education: People with high level of education"	0.742		0.578
Q1_8 "Not technologically advanced: Technologically advanced"	0.713		0.535
% of Variance	30.39 %	28.51%	
Cronbach's alpha	0.753	0.766	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 3 iterations.			

% Total Variance explained: 58.90

Kaiser-Meyer-Olkin measure of sampling adequacy (KMO): 0.848

Bartlett's test of sphericity: Approx. Chi-Square: 1544.272

Significance < 0.001

The five-item scale proposed for measuring the affective components of the country image have been analyzed (Burcio, Salgueiro, & Da Silva, 2016). The six scale items proposed to measure behavioral intentions, as well as the five dimensions with 15 scale items, to measure country personality have also been analyzed (Burcio, et al., 2016).

## 5. Hypothesized Research Model Validation

The hypothesized research model was estimated within the structural equation modeling framework using AMOS, and was first subjected to a confirmatory factor analysis (CFA) using the maximum likelihood estimation method to ensure the reliability and validity of the constructs.

Model data fit adequacy was assessed using various goodness of fit indices and measures, namely the chi-square and the corresponding degrees of freedom ( $X^2/df$ ), the root mean square error of approximation (RMSEA) (corresponding to a 90% confidence interval), the goodness of fit index (GFI), and the comparative fit index (CFI), as suggested (Hu & Bentler, 1999; Hair, Black, Babin, Anderson, & Tatham, 2005; Nunnally & Bernstein, 1994; Bryman & Cramer, 2009). According to the rules of thumb, the values of the fit indices should be above the standard model of adaptability, namely:  $X^2/df$  less than 3 (Carmines & Mclver, 1981); CFI > 0.90; GFI > 0.90 and RMSEA < 0.08.

Preliminary results of CFA indicated that the measurement fit indices do not fully meet the requirements of the suggested cutoff for the model fit indices. The analysis led to the removal of the item Q2\_18 (spiritual) from the *conformity* dimension due to its low factor loading (0.40). Additionally, an inspection of the modification indices resulted in a more appropriate fit to the data ( $X^2(591) = 1770.112$ ,  $p < 0.001$ ,  $X^2/df = 2.995$ , CFI = 0.916, PCFI = 0.812, GFI = 0.874, RMSEA = 0.054). The  $X^2/df$  value is considered acceptable, according to Marsh & Hocevar (1985), values from 2 to 5 indicate a reasonable fit, and Carmines & Mclver (1981) referred to a ratio value from 2 to 1 or from 3 to 1 is indicative of an acceptable fit between hypothetical model and the data.

Table 3 shows the construct reliability, the average variance extracted (AVE), and squared inter construct correlations (SIC) between latent variables. The constructs reliability estimates all exceeds 0.70 suggesting good reliability. The hypothetical model fits relatively well, based on the goodness of fit measures. All AVE values are above 0.50, except the ones from the cognitive country image dimensions (*environment* AVE=0.449; *people* AVE=0.452).

Lee & Lijia (2012, p. 7) got similar results of AVE for similar variables “*build environment*” (AVE=0.41) and for “*natural environment*” (AVE=0.40), however, their factors haven’t been measured with exactly the same items but correspond to the current study “*people*” and “*environment*” factors respectively.

All variances extracted (AVE) estimates have higher values than the square of the correlation between any pair of constructs, except the factor “*people*” of the cognitive country image, meaning there is no full support for discriminant validity of the dimensions. The “*people*” factor specifically, due to the inter dimension correlations between “*people*” and “*assiduousness*” did not show a discriminant validity (see Table 6.3). As a rule of thumb, all constructs AVE estimates should be larger than the corresponding SIC estimates – if it is achieved it suggests that the measured variables have more in common with the construct, they are associated with than they do with other constructs, and it does not happen at all.

Grounded on the results of the model evaluation process and supported, on both theoretical and statistical grounds, one can say that the model fits the empirical data well and demonstrated good reliability. However, it shows a partial validity and the convergent validity was not reached by the cognitive country image dimensions. Discriminant validity should be considered partially achieved due to the breakdown of the *people* factor (see Table 3).

*Table 3: Discriminant validity (comparing the squared inter construct correlation with average variance extracted (AVE) for each factor of the research model)*

Variables	Agreeableness	Snobbism	Assiduousness	Conformity	Unobtrusiveness	Environment factor (CCI)	People factor (CCI)	Affective Country Image	Behavioral Intentions to visit	AVE	Construct Reliability
Agreeableness	1									0.554	0.826
Snobbism	0.349***	1								0.548	0.875
Assiduousness	0.389***	0.187***	1							0.559	0.791
Conformity	-0.048	0.034	0.278***	1						0.502	0.746
Unobtrusiveness	0.197***	0.501***	0.275***	0.078	1					0.526	0.767
Environment factor (Cognitive country image)	0.299***	0.435***	0.370***	0.200***	0.376***	1				0.449	0.762
People factor (Cognitive country image)	0.376***	0.339***	0.696***	0.136**	0.350***	0.660***	1			0.452	0.767
Affective country image	0.275**	-0.410**	0.321**	0.183**	-0.107**	0.565**	0.399**	1		0.644	0.800
Behavioral intentions to visit	0.168**	-0.295**	.189**	.160**	-0.080*	0.518**	0.250**	0.684**	1	0.513	0.836

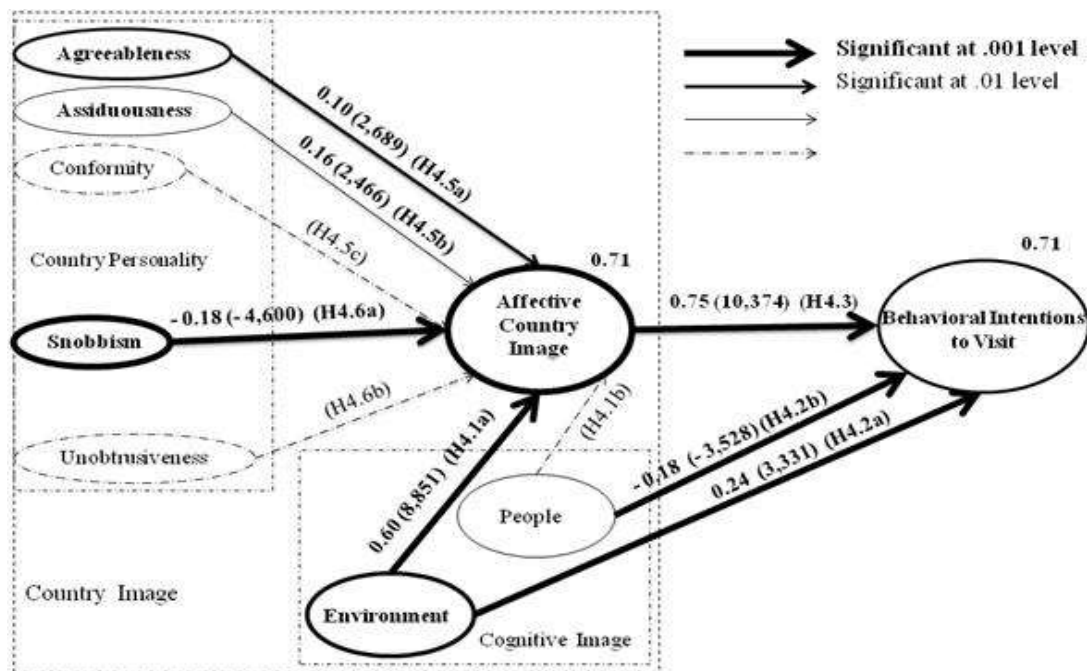
\*\*\*. Correlation is significant at the 0.001 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\*. Correlation is significant at the 0.05 level (2-tailed).

The hypothesized SEM includes the independent variables: five country personality dimensions (*agreeableness*, *snobbism*, *assiduousness*, *conformity* and *unobtrusiveness*); and two cognitive country image dimensions (*environment* and *people*). The mediating variable - affective country image, is measured by five items. The dependent variable - behavioral intentions to visit is measured by 5 items. Figure 2 displays the integrated path diagram of the model with the estimates obtained in a standardized solution (with a critical ratio (CR) values computed by AMOS in parenthesis). The percentage of the variance of the construct behavioral intentions to visit/travel, explained by the hypothesized research model equals around 71%.

Figure 2: Hypothesized integrated model validation with estimates in a standardized solution



Path coefficients estimated in SEM and the results of the hypotheses H4.1, H4.2, H4.3, H4.5 and H4.6 are shown in Figure 2. The path coefficient from *agreeableness* and *assiduousness* (country personality dimensions) to affective country image are significant and positive at the 0.01 and 0.05 level respectively, indicating a positive relationship ( $\beta$ (regression coefficient) = *Agreeableness* → *Affective Country Image* = 0.098,  $p=0.007$ ,  $CR= 2.689$ ;  $\beta$  *Assiduousness* → *Affective Country Image* = 0.157,  $p=0.014$ ,  $CR= 2.466$ ). However, the path coefficient from the *conformity* to affective country image is not significant. The path coefficient from the *snobbism* to affective country image is negative, yet statistically significant at the 0.001 level, indicating a negative relationship ( $\beta$  *Snobbism* → *Affective Country Image* = -0.184,  $p< 0.001$ ,  $CR= -4.600$ ). Nevertheless, the path coefficient from the *unobtrusiveness* to affective country image is not significant. Therefore, while hypotheses H4.5a, H4.5b and H4.6a are supported, hypotheses H4.5c and H4.6b are not supported.

The path coefficient from the *environment* dimension of cognitive country image to the affective country image is significant and positive at the 0.001 level, indicating a positive relationship ( $\beta$  *Environment* → *Affective Country Image* = 0.602,  $p< 0.001$ ,  $CR= 8.851$ ). However, the path coefficient from *people* dimension of cognitive country image to affective country image is not significant. Therefore, hypothesis H4.1a is supported, while hypothesis H4.1b is not supported.

The relationship between affective country image and behavioral intentions to visit showed a positive relationship, significant at the 0.001 level ( $\beta$  *Affective Country Image* → *Behavioral Intentions to Visit* = 0.753,  $p< 0.001$ ,  $CR = 10.374$ ). Thus, hypothesis H4.3 is supported.

The path coefficient from *environment* and *people* dimensions of cognitive country image to behavioral intentions to visit are both significant at the 0.001 level, however the *environment* dimension is positive, indicating a positive relationship ( $\beta$  *Environment* → *Behavioral*

*Intentions to Visit* = 0.240,  $p < 0.001$ ,  $CR = 3.331$ ), whereas the *people* dimension is negative, indicating a negative relationship ( $\beta$  *People* → *Behavioral Intentions to Visit* = -0.183,  $p < 0.001$ ,  $CR = -3.528$ ). Therefore, hypothesis H4.2a is supported; however, hypothesis H4.2b is not supported in the way that is hypothesized (assuming to have a positive influence), indeed the path is significant but with a negative sign.

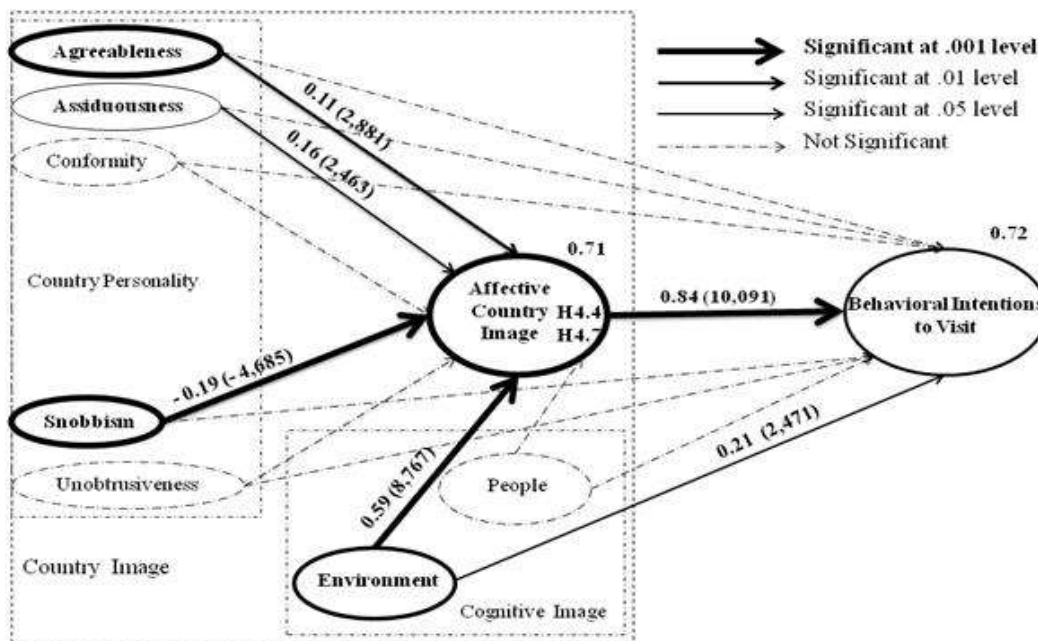
Mediation validation

For determining the mediation (test hypotheses H4.4 and H4.7) the current study followed the approach suggested by Baron & Kenny (1986). The intervening variable mediates the relationship between the independent variable and dependent variable (Usakli, 2009, p. 85).

In order to validate the mediating role of affective country image, an alternative model which included direct paths between the country personality dimension and the behavioral intentions to visit was examined. Figure 6.3 displays the path diagram of this alternative model, with the estimates that were obtained in a standardized solution (with critical ratio values computed by AMOS in parenthesis).

The set of statistics shows that the alternative model has an acceptable fit to the data ( $X^2$  (586) = 1760.811,  $p < 0.001$ ,  $X^2/df = 3.005$ ,  $CFI = 0.916$ ,  $GFI = 0.874$ ,  $RMSEA = 0.054$ ). However the hypothesized research model (Figure 6.2) ( $X^2$  (591) = 1770.112,  $p < 0.001$ ,  $X^2/df = 2.995$ ,  $CFI = 0.916$ ,  $GFI = 0.874$ ,  $RMSEA = 0.054$ ) shows a better ratio  $X^2/df$  (2,995), thus a better proposal (Carmines & McIver, 1981) for an acceptable fit between the hypothetical model and the data (p. 80). The examination of the path coefficients in the alternative model (Figure 3) indicated that none of the direct paths between the country personality dimensions and the dependent variable were statistically significant.

Figure 3: Alternative model with estimates in a standardized solution



The *assiduousness* and *agreeableness* (country personality dimensions) show a positive and significant influence on affective country image, whereas *snobbism* shows a significant

negative influence. However, none of the country personality dimensions shows significant direct influence on the dependent variable. Thus, country personality dimensions have shown an indirect effect on behavioral intentions to visit, confirming the full mediation effect (Baron & Kenny, 1986) of the affective country image between country personality and behavioral intentions to visit. Thus, it can be concluded that hypothesis H4.4 is supported.

According to the alternative model, the *environment* dimension of cognitive country image had a direct and an indirect influence on behavioral intentions to visit, according to the hypothesized, however, its direct influence on behavioral intentions is less significant (see Figure 3). On the other hand, the *people* dimension of cognitive country image did not show any significance. Thus, hypothesis H4.7 is partially supported.

These findings are grounded on the idea that behavioral intentions to visit are function of the cognitive, affective but also of a more holistic and symbolic component termed country personality. A broader view may be applied here and that includes the way in which consumers in general perceive country personality and cognitive country image and echo to their privileged type of affect toward a particular country before reaching behavioral intentions to visit a given country.

## **6. Contributions and Limitations**

To date, and with the best of the author's knowledge, this is the first study in country image to examine the consumers' direct and indirect influence of country personality, additionally to cognitive and affective country image as country image key variables on behavioral intentions to visit a given country. This study contributed to the consumer behavior literature, particularly behavioral intentions, and country of origin and branding destination literatures, as it examined an alternative theoretical explanation focusing on the cognition, emotion and human-like characteristics of a country, and proposing an integrated framework that jointly can explain more around 71% of the total variance of the dependent variable.

### **6.1. Academic contributions**

As a result of the investigation, there is a real contribution to the country-of-origin literature, with a model that integrates the country personality scale in measuring country image, in addition to its existing cognitive and affective components. It can be stated that theoretically it was validated the role of country personality as an antecedent of emotional links toward a country and therefore its indirect impact on people's psychological output of behavioral intentions for travel. As well it was validated the affective country image as a partial bridge linking a situational input of cognitive country image to people's psychological output of behavioral intentions.

This study also confirms the importance of cognition, mainly the environment dimension direct and indirect influence and the direct negative impact of the people dimension on behavioral intentions. However, it was not possible to draw conclusions that are consistent with the hypotheses posited - therefore this is a partial demonstration of the direct and

indirect influence of cognitive components on behavioral intentions to visit, and in the country's affective image as a mediator, and as such requires further development. This is the case most notably in relation to the cognitive country's people dimension, since the result shows a direct influence, albeit a negative one, in relation to the dependent variable and shows no significance toward the affective country image.

Although previous country image literature has stressed the importance of cognitive and affective image perception in predicting consumers' behavioral intentions (Roth & Diamantopoulos, 2009; Heslop, Lu & Cray, 2008) this study demonstrates the congruency of adding country personality as a complementary measurer. It was validated the relative importance of the country personality dimensions in the context of predicting behavioral intentions.

This study provides a complete insight into the application of country personality in the context of cross-cultural destination with only one country scrutinized by a sample from a second country that partly shares a common history and a mother tongue, and is geographically distant. The findings demonstrate that d' Astous and Boujbel (2007) six factor scale cannot, however, be fully replicated. Instead, it needs adaptation as some dimensions may be less relevant and others may flourish. The evidence of a five-dimension scale to describe country personality rather than the original six dimensions solution may be helpful for further research.

Together with the work of Aaker (1997) and Geuens *et al.* (2009), the current study shares the idea that a five-factor model is able to reflect all of the relevant country personality dimensions, as other brand personality studies did before in other contexts. The model that is proposed keeps most of the proposed analogies to the Big Five human personality scale and its original objective - an instrument to prove the country personality construct (Geuens, Weijters, & De Wulf, 2009; Nebenzahl, Jaffe, & Usunier, 2003; d' Astous & Boujbel, 2007). As for the relationship between country personality and research on the country of origin, the current study results show that country personality has an impact on behavioral intentions to travel/visit.

However, as expected, it was confirmed the importance of the country personality scale as a complementary tool for country image measurements. It was shown that people can easily go beyond mental representations concerning humans for qualifying adjectives associated with the personality of a country. From a theoretical standpoint, the study indicated that consumers do attribute personality characteristics to countries, and this is in line with previous research on destination personality e.g. (Ekinici & Hosany, 2006), and country personality research (Nebenzahl, Jaffe, & Usunier, 2003; d' Astous & Boujbel, 2007).

When talking about the mediation of affective country image and its positive influence on the outcome, it can be argued that the affective component of the image of a country has been confirmed as a mediator in the proposed model, which is consistent with previous studies (Maher & Carter, 2011; Heslop, Lu, & Cray, 2008; Brijs, 2006; Orbaiz & Papadopoulos, 2003) as they alluded about the largest and fastest effects of emotions as well, even though they used different intentions as outcomes.

The findings supported the following hypotheses: H4.1a (*The environment dimension of cognitive country image has a positive impact on the affective country image*), H4.2a (*Environment dimension of cognitive country image has a positive impact on behavioral intentions to visit the country*), H4.3 (*The affective country image has a positive impact on behavioral intentions to visit*), H4.4 (*The affective country image mediates the relationship between the cognitive country image dimensions and behavioral intentions to visit the country*), H4.5a (*Agreeableness has a positive impact on affective country image*), H4.5b (*Assiduousness has a positive impact on affective country image*), and H4.6a (*Snobbism has a negative impact on affective country image*) are supported.

Whereas hypotheses H4.1b (*People dimension of cognitive country image has a positive impact on the affective country image*), H4.2b (*People dimension of cognitive country image has a positive impact on behavioral intentions to visit the country*), H4.5c (*Conformity has a positive impact on affective country image*), and H4.6b (*Unobtrusiveness has a negative impact on affective country image*) are not supported.

Hypothesis H4.7 (*The affective country image mediates the relationship between country personality dimensions and the behavioral intentions to visit a country*) is partially supported.

Theoretically, and supported by country of origin, destination branding and consumer behavior literature, logical and empirically valid links of “country personality → affective country image → behavioral intentions” have been demonstrated, with an affective country image showing a perfect mediating effect. Following the same line of thought, the “cognitive country image → affective country image → behavioral intentions” have been partly proven, as well as cognitive “country image → behavioral intentions”, since only one of the factors – environment - of the cognitive country image confirms the hypothesized connections.

## 6.2. Managerial contributions

The identification of trends and their application to Brazilians as potential visitors to Portugal is likely. As expected, it was confirmed the high importance of the affective image construct and its direct influence on individuals’ behavioral intentions to visit, and one may refer to the influence on country attractiveness, whenever historical affinity as well as mother tongue sharing is present, which is the case of Portugal and Brazil.

In particular, marketers who study and work Portugal as a destination country can differentiate it based on its personality dimensions and can use them in their positioning efforts. Emphasis should be placed on the treatment of three of the five main personality traits (*snobbism*, *assiduousness*, and *agreeableness*) that were found to be the most significant predictors of consumer behavioral intentions to visit.

The traits associated with *snobbism* ( $\beta$  (regression coefficient) = 0.18,  $p < 0.001$ ) have shown a powerful and negative influence and as such it is suggested that measures should be taken to mitigate or minimize their negative impact on intention to visit Portugal. On the other hand, personality traits associated with *agreeableness* ( $\beta = 0.10$ ,  $p < 0.01$ ) and *assiduousness* ( $\beta = 0.16$ ,  $p < 0.05$ ) should be highlighted, as these contribute positively to intention to visit. Finally,

practitioners should consider the high importance of cognition and the crucial effects of the emotional links ( $\beta = 0.75$ ,  $p < 0.001$ ) toward Portugal.

Thus, according to the respondents' evaluation it can be concluded that Portugal is mostly seen by the sampled Brazilian population as a country with much history, culture and arts, with attractive scenery and high-quality attractions. The affective component of the image of Portugal is assessed as being very positive by Brazilians, since four of the five items measuring the construct, obtained values above 4.0 on a scale 1-5. The results show that Brazilians like Portugal indeed.

### 6.3. Research limitations

The findings of this study are specific to one country. Brazil has 27 states and the study was only conducted in two of them, albeit being among the most populous and simultaneously have the appropriate characteristics according to the previously established criteria. Even though, to some extent, the findings may be generalizable to the defined population, but limitations should be fully noted when applying the results.

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## Creating enthusiasm about farmers' markets in a post pandemic world – a South African-German comparison

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### Abstract

Before the pandemic farmers' markets were fashionable places for shopping, entertainment, and socializing, and in many cases are no longer sources of cheaper or more convenient shopping. With the growth of the craft and the organic food movements, such products are often marketed through farmers' markets. Entertainment (e.g., music) is also often provided. In South Africa and Germany, they were either closed or could take place only very limited during the pandemic. Why farmers' markets were so popular may be due to a variety of reasons such as shopping, entertainment, and socializing. This research identifies what attracted customers to farmers' markets before the pandemic and what creates satisfaction for the customer. The results help to re-vitalize farmers markets after the pandemic. A quantitative, descriptive, cross sectional study is used, based on a sample of 1141 respondents from an online-accessed panel of consumers. It is also a comparative study between a developed nation (Germany) and a developing nation (South Africa). The research culminated in a Kano model for farmers' markets in each of the countries. There was considerable similarity in the 'delight' and 'performance' factors in the two countries, but only South Africa has 'basic' factors (two), while Germany had none. The study thus contributes to knowledge about consumer behavior and attitudes towards farmers' markets and adds to the literature on the use of the Kano model, especially in South Africa.

### Keywords

Retailing, Kano model, farmers' market, consumer behavior, purchase behavior

## **Management Practice and Competence Required in a New 4IR World of Work Post Pandemic**

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### **Abstract**

In the world of work and recently the “new world of work” the question is continuously asked what skills or competence do you need to survive and thrive in this world? We read a lot about the 4<sup>th</sup> Industrial Revolution (4IR) and the new jobs of the future that culminated from this Revolution. Management practice and competence comes to mind. In 2020 a new challenge turned the world of work on its head through a pandemic of unthought of impact on all people in all types of organizations, no matter of type or size or strategy of the organization, change had to take place overnight. Management can be defined in the broadest sense of the word, as “The process of getting things done, effectively and efficiently, through and with other people”. The purpose of this paper is to do a comprehensive literature review on the evolution of management practice and competence and to identify which of these are the most important to manage and lead effectively in the new world of work.

### **Keywords**

World of work, post pandemic

## Perception of Financial Self-Efficacy of Brazilian Investors - A Generational Perspective

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### Extended abstract

The way men and women deal with money refers to cultural aspects and constructions of gender behavior within social and historical contexts over time (Meirelles, 2012). For many years, Brazilian women were seen as the guardians of the family, excluded from the role of financial provider, having even suffered discrimination when assuming this position in the past. The Brazilian financial emancipation is a recent phenomenon. The right to work without the husband's authorization was guaranteed in 1843. The right to have a Register of Individuals (CPF) and a bank account independent of the spouse only in 1962. Over the years, even with the increase in the participation of women in the economy, they still have a smaller presence in investments. On the Brazilian stock exchange, B3, they represent 22.69% of the 1.5 million active CPFs and on the "Tesouro Direto" – federal public bond sales program for individuals, 31.20% of the 4.5 million investors. Overall, academic studies point to the fact that women have a more conservative investment behavior with greater risk aversion (Barber, Odean, 2001; Dwyer, Gilkeson & List, 2002; Mittal & Vyas, 2011; Charness & Gneezy, 2012; Montford & Goldsmith, 2015) have a lower level of financial literacy than men (Hasler & Lusardi, 2017; Lusardi & Scheresberg, 2017), in addition to a low perception of financial self-efficacy (Dietz, Carozza & Ritchey, 2003; Danes & Haberman, 2007; Estes & Hosseini, 2013; Serido & Shim, 2017). According to Farrel, Fry and Risse (2015), financial self-efficacy is directly linked to the financial products that individuals have in their portfolio. For researchers, more self-efficacious people tend to have more investment products and savings (savings) and incur less debt.

This study sought to answer the following question: How does financial knowledge influence the perception of financial self-efficacy among women of different generations and how can this impact their investment decision-making process? For this study, the following hypotheses were raised: H1a: The level of financial knowledge (FKS) positively impacts the investor's perception of financial self-efficacy (AEF); H1b: The generational factor works as a moderating variable in the relationship between financial knowledge (FKS) and financial self-efficacy (AEF); H2: Women with a greater perception of financial self-efficacy (FEA) more often choose more sophisticated financial products for their portfolio than those with low AEF; H3:

Women with more financial knowledge (FKS) more often choose more sophisticated financial products for their portfolio; and H4: Younger women more often choose more sophisticated financial products for their portfolio.

From a simple linear regression analysis, it was possible to see that there is a positive and significant relationship between the two variables: FKS and AEF. Proving, in this way, the hypothesis H1a. However, the analysis revealed that the relationship between FKS and AEF is significant regardless of the generation studied in this work. Therefore, the H1b hypothesis was not confirmed. To test the H2 and H3 hypotheses, the median of AEF and the median of FKS versus the frequency of choice of financial products were used, respectively. As for hypothesis H4, the frequency of choice of financial products was evaluated separately by generational cohort. Women with a low perception of financial self-efficacy (low AEF) tend to choose less complex financial products more frequently (savings, public and private fixed income securities and fixed income funds). Participants with high AEF choose sophisticated products more often (27%) compared to low AEF (22%). Despite a slightly smaller difference in the frequency of choice, respondents with greater financial knowledge (FKS) also tend to have bolder products in their portfolio (multimarket funds, equity funds, real estate funds and shares) than those with low FKS (38% and 33%, respectively). Finally, the youngest investors, between 18 and 24 years old, are the ones with the boldest investment portfolio. Among your choices, 52% are more sophisticated assets. Therefore, hypotheses H2, H3 and H4 were confirmed.

### Keywords

Investor behavior, gender, self-efficacy, financial knowledge, generation

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## The Structure of Business Models of High-Growth Enterprises - Case Study

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### **Abstract**

In management theory as well as practice, issues related to business models occupy an important place. They illustrate the concept of conducted activity. Business managers should analyze the business model put in place in a company. This is necessary to correct any management errors or identify success factors. There are numerous discussions in the literature on the fundamental logic of business. The problem of business models is therefore an interesting issue in both theoretical and practical aspects.

Despite extensive research on the subject, it is still possible to identify areas that have not been sufficiently explored. One of them is the analysis of business models of high growth enterprises (HGE). These companies are characterized by an increase in employment and/or an increase in sales revenue of more than 20% on average per year for three consecutive years. They contribute to job creation and the creation of additional value. The basic aim of the study is to identify the structure of business models of high growth enterprises. Research was conducted on the essential components of business models of 150 HGEs in Poland were described.

The features of the components of business models that were characteristic of most entities were observed. These included targeting production to specific market industries, systematically increasing product and service offerings and conquering new industries and markets, and not being dependent on a key customer but being dependent on a key industry. The conducted research indicated the essential attributes of the business models of HGEs.

### **Keywords**

Business model, high growth enterprises

## **Examining Service Design of Voluntary Community Groups as a Transformative Service: The Case of Northern Ireland and Croatia**

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### **Abstract**

The aim of this research is to examine the service design adopted by Voluntary Community Groups (VCGs) to reach marginalized citizens who have failed to engage with broader society after a period of conflict. VCGs are a transformative service by design, formed to improve well-being, create social value within a community and reach out to the most marginalized citizens to maintain a cohesive place. Transformative Service Research (TSR) focuses on how services can improve the well-being of consumers and communities. Several calls have been made to advance understanding of TSR with a focus upon 'unserved' or marginalized citizens. Derry-Londonderry in Northern Ireland and Zagreb in Croatia will be used as the locations for data collection. The case locations chosen for investigation have been purposefully chosen to address the research aim. Northern Ireland and Croatia both experienced periods of conflict until the mid-1990s; both have growing service economies and education attainments are rising. The proposed research is in early stages with a gatekeeper established to aid snowball sampling in both Northern Ireland and Croatia.

### **Keywords**

Voluntary Community Groups, Transformative Service Research, Northern Ireland, Croatia

## **E-invoicing and VAT Fraud – Italian Experience and Polish Plans**

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### **Abstract**

The introduction of e-invoices aims to reduce administrative costs. In addition, the digitization of invoices has the potential to reduce VAT fraud. We discuss the benefits of e-invoices and analyze their fraud reduction effect. For this, we use trade data for Italy, where e-invoices have been widely introduced. The proxy for VAT fraud is the discrepancy in trade data that is double reported (both in the importing country and the exporting country). The initial results suggest a reduction in VAT fraud as a response to the introduction of e-invoices. However, the emerging increase in fraud during the pandemic period is noteworthy. Tax fraud directly harms the public finances. Moreover, it distorts competition and is thus harmful to honest businesses. In addition to the savings in administrative costs, the reduction of VAT fraud can be an important argument for the introduction of e-invoicing in more countries of the EU. Against this background, we analyze the planned introduction of e-invoices in Poland and survey polish companies about it.

### **Keywords**

E-invoices, international trade, VAT fraud, trade gap

## **When Fond Memories Are Brought to Mind: The Development of a Nostalgic Brand Evaluation Instrument**

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### **Abstract**

Worldwide anxiety and uncertainty were caused by the Covid-19 pandemic. In times of increased uncertainty and anxiety about the future, consumers tend to retreat to nostalgic memories and the experiences and/or products associated with these memories in an attempt to maintain a sense of personal continuity amidst challenging circumstances. This process is considered constructive for an individual's psychological well-being. Nostalgia entails a subconscious attempt to rather focus on the 'better days of the past' amidst anxiety-provoking circumstances in the present. Consumers tend to look to the past for comfort, which implies that nostalgia seems to be more evident in challenging economic climates, for example. The years 2020 and 2021 have been characterized by much anxiety and uncertainty amongst the world population in terms of health, freedom to travel, the world economy and the future in general. It can be argued that a need to remember the 'better days of the past' is expected to be eminent amongst individuals for a long time based on the effects that the Coronavirus pandemic have caused until present. As a result, a research opportunity for nostalgic brands and communication was identified and pursued.

Based on secondary research, this study set out to develop a theoretically sound nostalgic brand evaluation instrument. This novel instrument is intended to be used as a tool for strategic marketers to determine the suitability of a brand, based on its characteristics and profile, to potentially benefit from nostalgic marketing appeals. Ten evaluative criteria or 'preferred characteristics' were identified that can guide whether a brand would have a likely inclination towards nostalgic marketing appeals. These ten criteria include consumers' familiarity with the brand, whether the brand appeals strongly to sensory associations, whether consumers foster strong emotional attachments towards the brand, whether the brand includes product categories with distinct emotional connotations, whether the brand

emphasizes sentimental value for the consumer, consumers' exposure to the brand as children, the brand's symbolic value for the consumer and whether the brand is inclined towards the creation of distinct consumer experiences, especially emotional experiences. Brands that embody these characteristics are expected to elicit successful nostalgic marketing communication and strategies.

**Keywords**

Nostalgia, familiarity, brand experience, sensory experience, emotional attachment

## 1. Introduction

John C. Maxwell once wrote, 'reflective thinking turns experience into insight' (Stack, 2011). Accordingly, the power of reflective thought and nostalgic memory, as it provides insight in a situation, can manifest in significant effects on consumer behavior.

It is explained that when consumers experience a significant degree of uncertainty and anxiety about the future, a tendency to retreat to past memories, habits and consumption related to these memories and habits, can be expected to occur as the conscious (or subconscious) yearning for the reassurance and comfort of the known past is likely to increase in such circumstances (Muehling & Sprott, 2004). The reason for a tendency to retreat to memories is because nostalgic reflection on the past contributes to maintaining a healthy sense of personal continuity amidst daunting circumstances. That is, a stable continuation of the self can be maintained despite fluctuations caused by changes in one's environment, which is positively related to psychological well-being, since the restoration of emotional equilibrium can be brought about (Sadeh & Karniol, 2012; Sedikides, Wildschut, Routledge & Arndt, 2015). The worldwide Covid-19 pandemic can be described as characteristic of such fluctuations caused by intensive and significant changes in every environment all over the world.

According to Ju, Kim, Chang and Bluck (2016), nostalgia is generally defined as a sentimental longing for the past, similar to a wistful affection, while Muehling, Sprott and Sultan (2014, p. 74) pose that nostalgia refers to a "positively toned evocation of a lived past in the context of some negative feeling toward the present or impending circumstance." It is, therefore, acknowledged that evoked nostalgia is not necessarily a purely positive experience, but consensus amongst scholars exist that nostalgia is indeed considered predominantly positive representing fond memories, positive affect and pleasant recollections of the past (Liebrenz-Himes, Shamma & Dyer, 2008; Muehling et al., 2014). Toledo and Lopes (2016) argue that a sense of evoked nostalgia can provide a significant degree of comfort in times of interruption and loss, which are normally associated with a significant sense of discontinuity rather than a sense of continuity. Interruption and loss associated with such a sense of discontinuity are further characteristics of the Covid-19 pandemic that people all over the world had been exposed to (simultaneously).

Nostalgia marketing fits distinctly and significantly within the experiential marketing framework, since a nostalgic marketing approach places emphasis on drawing connections between a marketed brand and the evoked positive emotions and sensations of consumers' past experiences (Ju et al., 2016). The fit of nostalgia marketing within the experiential marketing framework is further confirmed in that experiential marketing focuses on the hedonic, symbolic and aesthetic natures of consumption. Put differently, experiential marketing relates to a significant extent to consumers' emotional responses and psychological reactions elicited in various consumption situations (Ju et al., 2016).

Consequently, given the circumstances caused by the worldwide Covid-19 pandemic and the need to break through the clutter of competing marketing communication to gain consumers' attention through improved marketing strategies, an opportunity was identified for brands to utilize nostalgic brand communication for the benefit of both the brand and its consumers. It can, however, be argued that a nostalgic marketing approach would not necessarily be

suitable for all brands. Therefore, based on existing literature, key elements for developing a nostalgic brand evaluation instrument were identified to compile a theoretically sound tool for brand managers to determine a brand's suitability for the implementation of nostalgic approaches in its marketing strategies.

## 2. Methodology

The development of a nostalgic brand evaluation instrument resulted from secondary research conducted by scrutinizing the Google Scholar online search engine as well as the online data portal of a university library. Databases such as *EBSCOhost*, *Emerald* and *Scopus* were used to gain access to relevant academic research sources. The academic journals predominantly used to retrieve relevant academic articles include the *Journal of Consumer Research*, the *Journal of Marketing*, *Management Decision* and the *Journal of Consumer Psychology*. Keywords such as nostalgia, consumer behavior, nostalgic marketing, brand experience, consumer engagement, attitude, self-continuity and loyalty were used to guide the online searches for relevant information on the two data portals and to select the academic articles that were relevant to the research topic. The information and insights gained from these secondary resources were applied and reconstructed to put forward the ten proposed criteria for a nostalgic brand evaluation instrument, based on the findings of prior research reporting under which circumstances nostalgic marketing appeals could be expected to yield beneficial outcomes for a brand.

## 3. Findings: Developing a Nostalgic Brand Evaluation Instrument

The aim of developing a nostalgic brand evaluation instrument was to provide marketers with theoretically sound evaluative criteria by which to determine whether a brand is positioned correctly both in the minds of consumers and strategically by the brand owner to benefit from a nostalgic approach in the brand's marketing strategies. It is posited that this newly developed evaluation tool can act as a measurement for strategic marketers to determine (by their own judgement) whether their brand is/can be positioned as a nostalgic brand, in relation to competing brands in the market. The following ten evaluative criteria were identified and will be discussed next:

### Criterion 1

According to Belk (1988), brands that embody nostalgic feelings or memories that consumers associate with their childhood or past, should create a deeper affective attachment between the consumer and the brand than in the case of a brand without such an association. Furthermore, Martin (1998) explained that such a nostalgic association could lead to a significant sense of loyalty towards a brand. It is suggested that consumers who were exposed to a brand as children, would be more likely to be highly loyal to the same brand as adults, than consumers who had no exposure to the brand before adulthood. Similarly, a sense of familiarity seems to be non-negotiable pertaining to the effectiveness of nostalgia- evoking stimuli in marketing strategies, since a consumer would have to have a clear enough memory of the brand or the particular stimuli to relate it to a particular sentiment or fond memory

(Reid, Green, Wildschut & Sedikides, 2015). In an online context specifically, which significantly relates to the current circumstances regarding the Covid-19 pandemic worldwide, Heinonen (2018) argued that brand familiarity denotes a positively valenced influencer of certain suggested behavioral outcomes of evoked nostalgia, such as active consumer engagement, towards a brand.

Consequently, it is argued that a sense of familiarity with a brand might be a decisive factor pertaining to the brand's competitive advantage. Therefore, criterium 1 for a nostalgic brand evaluation instrument is proposed as follows:

*A significant sense of familiarity is attached to the brand and consumers have prior knowledge of, or exposure to, the brand.*

### Criterium 2

In the 1990's already, Holbrook (1993) suggested the connection between scents (olfactory experience) and nostalgic emotions. Holbrook and Schindler (2003, p. 112) found that fragrances or scents could be used very powerfully as agents to evoke "emotionally charged memories of similar smells remembered from long ago." Reid et al. (2015), confirmed that olfactory experience evoked greater nostalgia than other sensory experience based on the extent to which the scents (sensory stimuli) were arousing, autobiographically relevant and familiar. Similarly, Muehling et al. (2014), argued that scents could significantly generate a consumer's nostalgic response towards a brand, since these stimuli could have played an important role in defining the consumer's past, given the likelihood of the stimuli to be distinctly associated with significant events or past experiences in the consumer's life. Moreover, Holbrook and Schindler (2003) posed that olfactory stimuli have the ability to specifically evoke memories characterized by noteworthy and distinct emotions that the individual had experienced at a previous time. The significance of such memories lies in the fact that it is remembered over longer periods of time compared to memories formed in relation to other sensory modalities (Krishna, 2012; Reid et al., 2015), which suggests a noteworthy premise to establish effective brand recall amongst consumers.

Consequently, the second criterium for a nostalgic brand evaluation instrument is put forward:

*The brand appeals to strong scent-associations, for example, the smell of perfume or coffee.*

### Criterium 3

Emotional attachment forms the basis of consumer-brand relationships and sensory experience with the potential to evoke nostalgic response could result in the distinct arousal of emotions central to such attachment (Brakus, Schmitt & Zarantonello, 2009). Research by Holbrook and Schindler (2003) preceded this argument, stating that sensory stimuli have the power to significantly evoke emotionally charged memories, that is, memories characterized by a noteworthy emotional attachment between the individual and the person/brand being remembered. Chou and Singhal (2017) furthermore explain that nostalgia represents a positive emotional experience in principle, despite acknowledgements of possible negative associations that consumers may foster towards nostalgic memories. It can, therefore, be argued that nostalgic marketing appeals would be most effective for consumers' positive

emotional states, which are characteristic of emotional attachment. Similarly, it can be argued that nostalgic marketing would be most suitable for a brand that capitalizes on emotional positioning, given that nostalgia enhances positive emotions and tends to result in beneficial behavioral consumer responses towards the brand (Bambauer-Sachse & Gierl, 2009). The literature (Muehling & Pascal, 2011; Pascal, Spratt & Muehling, 2002; Wei, Kang & Schmierbach, 2020) provides further agreement that nostalgia is considered a powerful emotional feeling able to significantly influence attachment to a brand, which could manifest in positive attitudes and increased purchase intention towards the brand, for example. Positive emotional experience of the brand would tend to lead to a favorable evaluation of the brand offering and potentially result in increased attachment, as well as behavioral expression towards the brand, such as purchases (Wei et al., 2020).

Therefore, a third criterium for the nostalgic brand evaluation instrument is posed:  
*Strong emotional attachments are fostered towards the brand.*

#### Criterion 4

The areas in the human brain where the neurological processing of emotion, memory and sensory inputs, such as sound and smell, take place are directly connected (The University of Queensland Australia, 2018) and explains why music, for example, has been found to significantly influence the evocation of nostalgic memories (Chou & Singhal, 2017; Reid et al., 2015). Similarly, Muehling et al. (2014) suggested that auditory stimuli can specifically be used to activate nostalgic reflection, since music-based nostalgia prompts, for example, have been emphasized in the field of advertising specifically and were found to elicit positive attitudes and increased purchase intention towards the brand (Muehling & Spratt, 2004). Similarly, Ju et al. (2016) explained that by hearing an old familiar tune during an interaction with a brand, for example, could allow consumers to recall fond memories of a favorable past and in such a way draw a fond nostalgic association with the brand at hand. As Holbrook and Schindler (2003) found, consumers may foster a strong nostalgic bond with certain musical recordings, not because they particularly like the music, but because of the reminder it encapsulates of something they treasure and long to recapture from their younger days.

As a result, the fourth criterium is described as follows:

*The brand embodies significant auditory stimuli, such as certain songs, jingles or sounds.*

#### Criterion 5

According to Martin (1998), the sensory appeal of a brand's product offering is based on visual attractiveness, artistic value, as well as qualities related to sounds, smells, haptics and tastes. Depending on the product category, consumers may place value on how the product looks and feels, such as with clothing items, but could also attach greater value to qualities such as taste and smell regarding food items, for example. The neurological processing of these sensory appeals takes place in the same brain regions as where emotions and memory are processed (Cherry, 2019; Lin et al., 2014). Therefore, consumers' sensory experience of a brand would most likely lead to an associated emotion with the brand and contribute to the formation of a lasting positive memory of the brand, which relates to nostalgic association.

Consequently, the following criterium is also suggested for a brand to be considered suitable for nostalgic marketing appeals:

*The brand appeals to significant taste-associations, such as the taste of homemade dishes or coffee, depending on the product category.*

#### Criterion 6

It is argued that nostalgic marketing would be very effective for brands that represent product categories that have distinct emotional connotations, since nostalgia is characteristic of enhancing emotional responses from consumers, which tend to manifest in beneficial behavioral outcomes towards the brand (Bambauer-Sachse & Gierl, 2009). Cui (2015) explain that in nostalgia marketing, the aim is not only to sell the brand's product offering, but also the emotional associations attached to the product category. This is because, in nostalgic marketing, a shift takes place from predominantly focusing on the functional value of goods (the more traditional marketing approach) to focusing on the more hedonic or even holistic value attached to the product offering. Here, holistic value entails both the functional and emotional (hedonic) value that the consumer attaches to the brand and its product offering (Cui, 2015). Similarly, Hartmann and Brunk (2019, p. 672) state that nostalgia marketing has the ability to restore a "sense of specialness, romance and magic in everyday life", suggesting that it would be most applicable to products consisting of the emotional connotation related to such "specialness, romance and magic". It cannot be overlooked that nostalgia is defined to a significant extent by its affective component, which contributes to its ability to influence consumers' "lifelong preferences" pertaining to consumption (Reisenwitz, Iyer & Cutler, 2004, p. 58). Moreover, Holbrook and Schindler (2003, p. 121) posed that nostalgic bonding with beneficial outcomes for brands are to a large degree dependent on "intense affective consumption", which relates to product categories characterized by emotional connotation that would enable such affective consumption.

Therefore, criterium 6 is stated as follows:

*The brand is indicative of and represents products / includes product categories with distinct emotional connotations, for example, perfume, toys, cars or jewelry.*

#### Criterion 7

Nostalgia is generally referred to as a wistful affection or sentimental longing for the past (Ju et al., 2016) and it has been confirmed that consumers tend to look more evidently to these sentimental longings for comfort in challenging economic times specifically (Reisenwitz et al., 2004). Martin (1998) explains that when a bond (experiential and/or emotional) between a consumer and a brand is strong, the sentiments that the consumer foster towards the brand would extend beyond mere cognitive preference of the brand above its competitors that usually manifests in repeat purchases. Such experiential bonds can be formed when the brand intentionally uses its service scape and products as the 'stage and props' to engage consumers in such a way that a memorable interaction with the brand is created (Ihtiyar, Barut & Ihtiyar, 2019). This could further form the basis for a lasting memory of the brand, as well as a strong nostalgic association and consequent relationship with the brand (Ihtiyar et al., 2019). In other words, establishing the brand's sentimental value for consumers could be decisive in maintaining lasting consumer-brand relationships. Martin (1998) used the example of Coca-

Cola to explain that it was because of the sentimental and nostalgic value that consumers attached to Coca-Cola brand's name, taste and look that caused its product modification (changes in the product name, formula and packaging) in 1985 to fail immensely.

Therefore, a seventh criterium for a nostalgic brand evaluation instrument is suggested:  
*The brand offering represents and emphasizes sentimental value for the consumer.*

#### Criterion 8

Nostalgia refers to a preference, general liking, favorable affect and positive attitude towards experiences related to places, people or tangible objects that were common during a time when one was younger, which can include childhood, adolescence, early adulthood or even before birth (Holbrook, 1993; Holbrook & Schindler, 2003). Huang (2017) explain that experiential brands inclined towards nostalgic appeals most likely embody particular smells, scenes and objects that could have formed part (more likely than not) of an individual's childhood or youth, which tend to significantly trigger memories of the past. In other words, it is argued that childhood memories, specifically, could be decisive in consumers' attraction or inclination towards a brand's nostalgic appeals. It has been supported by Muehling et al. (2014) that home, family and friends are deemed key elements of nostalgia and that a nostalgic response towards a brand would more likely occur for a consumer who has developed associations with the brand since childhood already than a consumer who had only been exposed to the brand as an adult. Therefore, it is argued that successful nostalgic marketing appeals should emphasize consumers' childhood memories, that is, memories that were intricately part of the growing-up experience. Muehling et al. (2014) further state that the amount of exposure a child had to a brand while growing up, would be directly proportional to the likelihood that the brand would be stored in the child's long-term memory and be retrieved in future life-stages. Similarly, Braun-LaTour, LaTour & Zinkhan (2007) pose that stories from early childhood later become frames of reference or mental models which would significantly influence an individual's purchase decisions and brand preferences as an adult.

As a result, Criterion 8 is stated as follows:

*It is likely that consumers had exposure to the brand during their childhood or an earlier period in their lives.*

#### Criterion 9

Khuong and Tram (2015) explain that an emotional encounter and a resulting emotional connection between a consumer and a brand, which represents a significant premise for nostalgic appeal, are affected by contemporary consumers' values and needs. Emotional connections between consumers and brands are fueling symbolic consumption in the modern-day market, that is, the consumption of brands or products with emotional and symbolic meaning (Rytel, 2010). Rytel (2010) also explained that these symbolic features or emotional attributes of products seem to continuously shape the needs of modern consumers and could have a more significant impact on consumer' decision-making processes, for example purchase decisions, than product features that do not embody symbolic meaning or association. In agreement, Toledo and Lopes (2016) posited that consumers' attitude towards

a brand, which can be deemed a decisive determinant of the consumer's relationship with the brand, would likely be based on symbolic aspects such as intangible characteristics and brand personality, rather than the functional characteristics of the brand's product offering.

It is argued that nostalgic marketing appeals encompass both emotional and symbolic features to a significant extent and, therefore, Criterium 9 is put forward as follows:

*The brand holds symbolic value for the consumer, for example, the brand has a distinct brand image or emotional connotation that the consumer can identify with.*

#### Criterium 10

According to Schindler and Holbrook (2003, p. 279), a distinct emotional experience of "intense affective consumption" is necessary for a brand to achieve consumers' nostalgic preference of a brand amongst its competitors. It is argued that consumption characterized by such "intense affective consumption" could transform individual tastes involved in the emotional experience with the brand into enduring individual preferences. Similarly, Reisenwitz et al. (2004:58) argue that consumers' affective experiences with brands could significantly influence their "lifelong preferences" related to consumption. Nostalgia is greatly defined by such an affective component. Holbrook and Schindler (2003, p. 121) agreed that the distinct emotional experience that "intense affective consumption" elicits between a consumer and a brand has a definite role to play in consumers' nostalgic bonding with a brand, which is expected to yield several beneficial outcomes, such as consumer loyalty and increased purchase intention. Moreover, it is confirmed by Wei et al. (2020) that consumers' positive affective experience of a brand is likely to result in favorable evaluations of the brand's product offering, which could further manifest in increased purchase intentions.

Therefore, the last criterium for the proposed nostalgic brand evaluation instrument is presented as:

*The brand is inclined towards the creation/support of distinct consumer experiences, especially emotional experiences.*

The suggested criteria for the nostalgic brand evaluation instrument are summarized in Table 1.

Table 1: Nostalgic brand evaluation instrument criteria

No	Nostalgic brand characteristics	Reference
1	A significant sense of familiarity is attached to the brand and consumers have prior knowledge of, or exposure to, the brand.	Belk (1988); Heinonen (2018); Martin (1998); Reid et al. (2015)
2	The brand appeals to strong scent-associations, for example, the smell of perfume or coffee.	Holbrook (1993); Holbrook & Schindler (2003); Krishna (2012); Muehling et al. (2014); Reid et al. (2015);
3	Strong emotional attachments are fostered towards the brand.	Bambauer-Sachse & Gierl (2009); Brakus et al. (2009); Chou & Singhal (2017); Holbrook & Schindler (2003); Muehling & Pascal, 2011; Pascal et al. (2002); Wei et al. (2020)
4	The brand embodies significant auditory stimuli, such as certain songs, jingles or sounds.	Chou & Singhal (2017); Holbrook & Schindler (2003); Ju et al. (2016); Muehling et al. (2014); Muehling & Sprott (2004); Reid et al. (2015); The University of Queensland Australia (2018)
5	The brand appeals to significant taste-associations, such as the taste of homemade dishes or coffee, depending on the product category.	Cherry (2019); Lin et al. (2014); Martin (1998)
6	The brand is indicative of and represents products / includes product categories with distinct emotional connotations, for example, perfume, toys or jewelry.	Bambauer-Sachse & Gierl (2009); Cui 2015; Hartmann & Brunk (2019); Holbrook & Schindler (2003); Reisenwitz et al. (2004)
7	The brand offering represents and emphasizes sentimental value for the consumer.	Ihtiyar et al. (2019); Ju et al. (2016); Martin (1998); Reisenwitz et al. (2004);
8	It is likely that consumers had exposure to the brand during their childhood or an earlier period in their lives.	Braun-LaTour et al. (2007); Holbrook 1993; Holbrook & Schindler (2003); Huang (2017); Muehling et al. (2014)
9	The brand holds symbolic value for the consumer, for example, the brand has a distinct brand image that the consumer can identify with.	Khuong & Tram (2015); Rytel (2010); Toledo & Lopes (2016)
10	The brand is inclined towards the creation/support of distinct consumer experiences, especially emotional experiences.	Holbrook & Schindler (2003); Reisenwitz et al. (2004); Schindler & Holbrook (2003); Wei et al. (2020)

#### 4. Conclusion

The proposed nostalgic brand evaluation instrument is not exhaustive, but rather represents recommendations from secondary research within an experiential marketing framework, that is, where emphasis is placed on consumer experience with a brand, especially emotional and sensory experience, to establish significant consumer-brand relationships. It is believed that this novel instrument could be effectively applied to marketing practice pertaining to firms' considerations to appeal to consumers by means of nostalgic marketing strategies, given the circumstances in the market caused by, for example, the Covid-19 pandemic and the need for brands to break through the clutter of marketing communication by competing brands. In other words, ten key characteristics were identified to compile a theoretically sound tool for brand managers to investigate, through self-evaluation, a brand's suitability for the implementation of nostalgic approaches in strategic brand communication.

Furthermore, this evaluation instrument has not yet been empirically evaluated and cannot, therefore, be deemed an empirical measurement instrument. In future research, therefore, empirical research on the theoretical evaluation instrument could be conducted to determine its statistical significance.

The theoretical evaluation instrument is intended to be used as a tool by marketers to determine the fit between these preferred criteria and their brands' current positioning in the market. The fit determination could be executed by the brand team and/or a sample of the market segment (or a new segment), dependent on the strategic direction of the use of nostalgia in the brand's marketing strategies and/or persuasive communication. A proposed methodology will be to, firstly, evaluate the predominance and/or presence of the nostalgic criteria in the brand's current characteristics and, secondly, to determine the valence (strength) of the fit between the brand characteristics and each criterium. Should a predominant fit between the brand and the ten preferred criteria be confirmed, it can be deemed worthwhile to implement nostalgic appeals in the brand's future marketing strategies. When the brand's profile characteristics, based on the evaluation instrument's criteria, lend itself to nostalgic approaches, it can be expected to yield beneficial consumer behavioral outcomes for the brand.

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## Mobile Banking as a Means to Financial Inclusion

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### Abstract

The attitudes and perceptions of residents of rural Dennilton, in Limpopo province South Africa, about mobile banking as a means to financial inclusion were explored. The Technology Acceptance Model was used to understand factors that affect the adoption of mobile banking by potential customers at the Bottom of the Pyramid. The study employed a qualitative methodology utilizing semi-structured face to face interviews. Data was analyzed by means of a content analysis. The themes identified were: a snapshot of financial inclusion, participants conceptualization of mobile banking, mobile banking uptake, types of mobile banking transactions used, usefulness and ease of use of mobile banking, perceived risk of using mobile banking services and customers' trust in financial and mobile service providers. Users of mobile banking recounted positive experiences, while non-users were uncertain and anxious about mobile banking. The study made several recommendations to institutions about ways of extending financial inclusion by means of mobile banking.

### Keywords

Mobile banking, financial inclusion, technology acceptance model, bottom of the pyramid

## 1. Introduction

The study investigates how mobile banking can be employed to increase the financial inclusion of customers at the bottom of the pyramid (BOP). One of the ideas investigated is how technology can be used as an alternative to brick and mortar bank branches to leverage access to banking services by people in rural communities. The study contributes insights into financial inclusion, as the World Bank (2015) cites that financial inclusion drives economic growth and reduces poverty, which is essential for the economic and social development of a country, specifically an emerging market such as South Africa. While the study was concluded before Covid-19 and its wide-ranging implications, the benefits offered by mobile banking in terms of facilitating social distancing and enabling access to services for the unbanked are timeous.

## 2. Background and Rationale for the Research

It can be argued that unemployment coexists with poverty and both contribute to financial exclusion, a consequence of which is income inequality. Income inequality is detrimental as it affects economic growth negatively (Kim, 2016). It stands to reason that financial inclusion and economic growth are amongst South Africa's key development objectives (Louis & Chartier, 2017). Unemployment is one of the socio-economic issues specifically affecting rural areas. Statistics South Africa (2021) reported an unemployment rate of 32.6 percent in the first quarter of 2021, an unenviable increase from the previous years' 27,2 percent.

Triegaardt (2006) explains that poverty and unemployment are prevalent in rural areas despite interventions by government to improve people's quality of life, making poverty a serious socio-economic problem in South Africa. Although the World Bank regards South Africa as an 'upper-middle-income' country, up to 50 percent of its households live in poverty (Meyer & Nishimwe-Niyimbarina, 2016). Exacerbating the socio-economic issues discussed so far is the hurdle of financial exclusion. The World Economic Forum (2017) outlines the contributors to financial exclusion as; (i) high fees of banking services, (ii) mistrust in banking institutions, (iii) concern that cash-less transactions are riskier, and (iv) the fact that a lot of business is conducted informally.

The study was conducted in Dennilton, in the province of Limpopo, South Africa. Dennilton forms part of the Thembisile Hani Municipality. The municipality covers an area of 2384 km<sup>2</sup> with a population size of approximately 310 000 (Thembisile Hani Local Municipality, 2016). The main industries include public services, business services and agriculture. People in rural areas often do not have access to adequate education and health care facilities (Kuo, Hanafi, Sun & Robielos, 2016). Rural villages like Dennilton are characterised by high levels of poverty, low levels of human development, and low levels of per capita income (Kumara, 2016).

### 3. Problem Statement and Objectives of the Study

The technology embedded in mobile phones can not only improve banking, but also enable banking, leading to the empowerment of users. Mobile banking can replace the functionality offered by brick and mortar branches which were originally designed as cash distribution points, facilitating deposits and withdrawals. Often physical branches in developing economies are based in cities and therefore do not service people in remote or rural areas; distance and long travelling time, add to incidental costs, contributing to the reasons potential customers cannot access financial services.

Finscope (2016) reported that approximately 8.5 million of the 37 million adults in South Africa are still excluded financially. Low geographic density and poor-quality infrastructure are cited as contributing factors (Cull, Demircuc-Kunt & Morduch, 2013). In the absence of a physical bank branch the opportunity for mobile banking, enabled by nearly ubiquitous mobile phones with internet connectivity, becomes clear. In times where, disruptive technology presents as many opportunities as challenges, managers should investigate the opportunities presented by mobile technology to enhance societal improvement and their organizations bottom line. The research opportunity that comes into focus relates to the intersection between mobile banking and financial inclusion. The uptake of Mobile banking is considered through the lens of the Technology Acceptance Model (TAM) whilst considering the role of rural contexts which are underexplored. The question which this research seeks to answer is:

*What are the attitudes and perceptions of the residents of Dennilton about mobile banking as a means to financial inclusion?*

## 4. Literature Review

### 4.1 The Bottom of the pyramid

Prahalad (2005), believes that wealth distribution takes the form of an economic pyramid, consisting of three tiers. The third, and lowest tier, includes more than 4 billion people living on less than US\$2 or R27 a day at purchasing power parity rates in developing and least developed countries (Prahalad, 2005), with an estimated market size of US\$13 trillion. People at the Bottom of the Pyramid (BOP) are located in both urban and rural areas. Urban BOP individuals are theorized to reside in the slums of the city, while rural BOP individuals reside in remote areas where access to transport and infrastructure is minimal (Kuo et al., 2016). Praceus (2013) also adds that the BOP segment is defined by a lack access to formal markets and incumbents are deeply entrenched in informal markets. Consequently, many people in remote areas who form part of the BOP can barely meet their day to day needs and are not in a position to make a substantial contribution towards the economy of the country. The perceived lack of purchasing power by those at the BOP has hindered both their financial inclusion and the development of products and services that can offer value to these customers and in turn earn returns for organizations. As a result, Prahalad (2005) encouraged the private sector and entrepreneurs to consider the BOP as a consumer market which can be reached with low cost services and appropriate business strategies. The defining characteristics of successful strategies aimed at the BOP include, affordability, acceptability

and availability (Prahalad, 2005), Ver Loren van Themaat et al., (2016) also introduced a fourth principle, awareness.

Spers and Wright (2015) reported that people at the BOP spend 80 percent of their income on basic needs like food, energy and transportation. This segment is also price sensitive (Spers & Wright, 2015), but the style and the attractiveness of the product they are purchasing (Jaiswal & Gupta, 2015) is important. The savings rate is low and as people at the BOP shop for belonging, this can create a platform for compensatory or face-saving consumption (King, 2016). The BOP segment is connected by means of mobile phones and this is a suitable medium to reach the BOP (Intelecon Research and Consultancy, 2013).

#### **4.2. Moving from financial exclusion to financial inclusion**

Unsurprisingly, economies with low levels of per capita income and high levels of unemployment engender high levels of financial exclusion. High levels of financial exclusion tend to be found in rural areas which are also far flung from basic amenities available to urban dwellers, such as ATM's and bank branches (FinScope South Africa, 2015). FinScope (2015) reported that people residing in rural areas take approximately 47 minutes to access an ATM and 55 minutes to reach a bank branch. High interest rates, bank charges, or an unappealing product offering serve to further exacerbate the phenomenon of financial exclusion (Kim, 2016). Demirguc-Kunt (2014) point out that people may not have the required documentation to open a transactional account. As a result, transactions in rural communities tend to be cash driven, making it difficult for individuals to monitor their consumption patterns (Chivasa & Simbanegavi, 2016).

CARE-Accenture (2015:6) defines financial inclusion as universal access to, and use of, affordable, quality financial services which are provided responsibly. Financial services include credit, savings, and insurance, payment and remittance services. CARE-Accenture (2015) reported that availability, acceptance and usage are key measures for financial inclusion. Cnaan, Moodithathaya and Handy (2012) agree and add that financial education is key to increasing financial inclusion. Access to financial services will improve the lives of the people at the bottom of the pyramid (Nanziri, 2016).

#### **4.3. Mobile banking**

To overcome hurdles such as distance and time to access the conventional ATM, mobile banking is touted as an alternative to traditional transactional banking (Siddik, Sun, Yanjuan & Kabiraj, 2014). It is a tool that can bring banking to the unbanked, owing to the personal nature of the communication functionality embedded in the device (King, 2013). King (2013) points out that a mobile phone is seen as an individual's personal space; therefore SMS, emails and messages on the device remain within an individual's personal space. A mobile phone with basic technology such as 2G is a means through which people can access banking services and products (Sundaram et al., 2016).

The functions and features of mobile banking are not dissimilar to those offered by a traditional branch and existing bank customers can also utilise mobile banking (King, 2013). Ondiege (2010) maintains that mobile banking is a cost effective way of delivering financial services to many people across the world who have a mobile phone but not a bank account. Ondiege (2010) also points out the following mobile banking advantages: immediacy, security and efficiency. According to Ikram and Lohdi (2015) mobile banking can reduce the need for visiting a branch and reduce transaction-related costs for the bank. However, perceptions on the usefulness and ease of use of new technology influences people's decisions about adopting new types of technology (Siddik et al., 2014).

#### **4.4. Technology acceptance model**

The TAM model postulates that the use of technology is influenced by the user's behavioral intentions, attitude and the perceived usefulness of a system (Park, 2009). TAM is based on two antecedents, namely perceived ease of use and perceived usefulness. Perceived ease of use (PEOU) can be explained as the amount of effort needed for mobile phone subscribers to use a new system or service (Ndlovu, 2013). Perceived usefulness (PU) refers to the subjective probability that using a specific application will improve or enhance the performance of a user (Surendran, 2012).

In the TAM, a person's perception about usefulness and ease of use of information systems is a factor that determines their attitude towards using an IT system, which eventually determines their acceptance and use thereof (Kim, Chun & Song, 2009). Attitude also represents what a person likes and dislikes as well as positive and negative feelings a person shows towards an object (Blackwell, Miniard & Engel, 2001). As a result, if a person displays a positive attitude towards a product or a system there is a greater chance that they will use it, the opposite is also true.

#### **5. Research Methodology**

The article adopts an interpretivist paradigm, which enables an understanding of the differences between people in their roles as social actors (Saunders, Lewis and Thornhill, 2012). This qualitative study employed snowball sampling, which entails that participants connect the researchers to additional participants via their networks (Saunders et al., 2012). A minimum of 30 participants were sought and ultimately 31 people were interviewed. In support of the sample size, Saunders et al. (2012) recommends a sample size of 5 – 25 people for semi structured or in-depth interviews. The interviews took place in 2017 and participants related their experiences and views about mobile banking. Each interview lasted about 45 minutes and they were transcribed to generate textual data. The researchers used a content analysis process for analyzing the data (Alhojailan, 2012). Data was segmented and assigned a code that best described the segment before being grouped into themes. Among other ethical issues, respecting participants and their privacy were important considerations that were adhered to in this study.

## 6. Findings

The participants comprised of fifteen male and sixteen female adults, across age groups and representing three ethnic groups, Ndebele, Northern Sotho and Tsonga. Figure 1 and 2 show the age and gender breakdown of participants. The participants in this research study resided in the Bundu and Matshipe villages in Dennilton. Table 1 shows the variety of languages spoken, the participants were diverse, and thus able to give greater insight into the research question.

Figure 1: Age breakdown of female participants

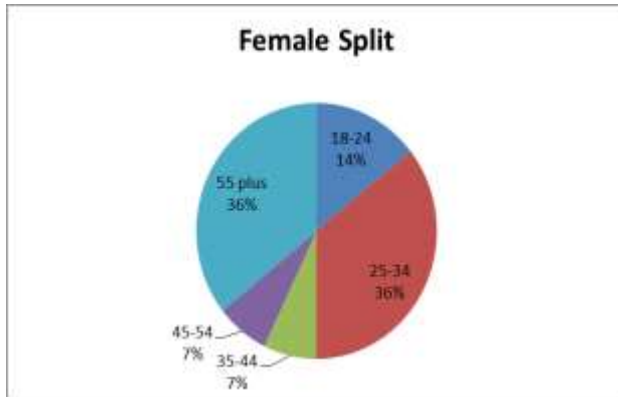


Figure 2: Age breakdown of male participants

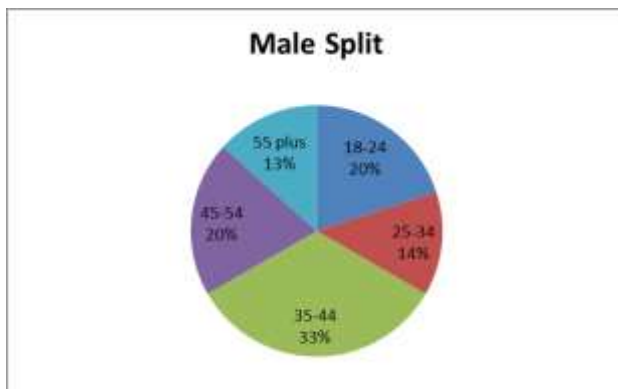


Table 1: Language broken down by village in Dennilton

Village	Northern Sotho	XiTsonga	IsiNdebele
Matshipe	7	10	0
Bundu	3	0	10

Participants were asked to indicate the highest level of education they had completed and the majority of respondents completed high school, seven had primary level education or lower and five had tertiary education. The interviews revealed that 10 participants were employed and 21 unemployed. Unemployed participants in the 18-34 year-old range are classified as youth, and thus the Dennilton participants seem to mirror the widespread youth unemployment challenge facing South Africa.

Participants who are unemployed do not form part of the formal financial system in South Africa. Twenty-two participants had a transactional banking account while nine participants did not have a transactional account. Three participants had more than two accounts at different banks, the majority of participants' bank with Capitec, a relatively new market entrant with lower fees (CARE– Accenture, 2015).

## 7. Themes

Eight themes have been deductively identified and will be discussed.

### Theme 1: A snapshot of financial inclusion

Measuring financial inclusion is not a straight forward exercise and the measures of financial inclusion proposed by CARE– Accenture (2015), namely availability, acceptance and use, are helpful. This theme looks at the proximity of branch networks and distribution channels. Participants across all ethnic groups who were in possession of a transacting account mentioned Kwaggafontein, in the town adjacent to Dennilton, as their nearest branch. The participants use public transport (mini bus taxis) to visit bank branches at a cost of R30 (roughly \$2) return, and the distance travelled to reach the branch is 20.8 km according to Google maps. The time it takes to reach Kwaggafontein varies - the responses provided by the participants ranged from fifteen up to forty-five minutes.

Bank charges for transactions and monthly fees differ by bank. People employed in the formal sector are compelled to own a transacting account because their salary must be deposited into an account. A minority of unemployed participants did not have transactional accounts:

Participant 6: *“I used to have a bank account when I was working; I think I will open it again when I get a job.”*

However, one participant kept their money at home and used Shoprite Money Market Services. Shoprite is one of the largest retailers in South Africa and their Money Market Services makes it easy for customers to send or receive money from any of their stores and neither the sender nor the recipient needs a bank account, only a cell phone number (Shoprite, 2017). The participant indicated that they rely on remittances from their family. Remittances from city dwellers are frequently sent to family members in more rural areas (FinMark Trust, 2009).

Participant 15: *“I use money market and I buy from the local shop using cash.”*

### Theme 2: Participants' conceptualization of mobile banking

It was important to ascertain participants understanding of mobile banking and roughly half the participants knew about mobile banking but did not provide a 'standard' definition. Extracts from participants responses support this, focusing their definitions on functionality:

Participant 7: *“Yes, I deposit money into my account, then I can check the balance, I can transfer the money whilst I am at home using my cell phone.”*

There were participants who were not sure what mobile banking entails, however they pointed out that they have heard about it:

Participant 22: *“I heard about it but I no one has explained it to me.”*

Participants had varied understandings about what mobile banking entails and what it could do for them.

### Theme 3: Mobile banking uptake

The non-users of mobile banking could be divided into those with and those without transactional accounts. Non-users who did not have transactional accounts cited lack of knowledge or education about mobile banking as a hurdle:

Participant 20: *"I do not have the knowledge about it"*.

Participant 8: *"I cannot say because I do not know what mobile banking is"*.

In the absence of using mobile banking, cash is the means for concluding daily transactions.

Participant 12: *"I pay out of my pocket and use money I keep (in) the house to buy what I need."*

Limited customer knowledge of mobile banking impacts the perceived usefulness of mobile banking (Alsamydai, Yaseen, Alnaim, Dajani & Al-Qirem, 2014). People will need adequate knowledge about mobile banking in order to consider mobile banking as an alternative.

### Theme 4: Type of mobile banking transactions used

A small number of participants indicated that they use mobile banking. The types of transactions that participants used mobile banking for were: sending or receiving cash, buying airtime or electricity, paying bills and taking out temporary loans. Of the participants that used mobile banking, it is clear that the bank led model is predominant; because they access banking services through the mobile banking services of a bank. The mobile led model is an alternative for unbanked people because they can access banking services through mobile banking service providers; this is presently under-utilized by participants.

### Theme 5: Usefulness of mobile banking services

Perceived usefulness is an important component of the Technology Acceptance Model (TAM) and two relevant and related ideas emerged, convenience and time efficiency. All the users of mobile banking services explained that it is useful because it has made their lives easy, saved time, and has reduced the need to travel to the bank:

Participant 9: *"You do not need to travel, you do payments from home. I used e-wallet to pay building contractors when building our house at home"*.

Interestingly, non-users of mobile banking with knowledge about mobile banking expressed the same views as users of mobile banking, saying:

Participant 21: *"You can do transactions anywhere and anytime."*

All the users of mobile banking concur that it cuts out travelling time to the bank and time they spent waiting for a taxi, walking to the bank, waiting in queues, completing their transactions and travelling back home:

Participant 7: *"Reduced travelling time to the bank, I can send money in two minutes."*

#### Theme 6: Ease of use of mobile banking services

Perceived ease of use (also derived as an antecedent in TAM) is defined as the degree to which a person believes that using a particular system such as mobile banking would be free of effort (Ndlovu, 2013). The participants believe that banking is effortless because they receive instructions for completing transactions:

Participant 29: *"Yes I think it uses mobile technology and anything that uses technology makes things easy."*

On the other hand, the key reason that emerged for not using mobile banking is a lack of knowledge. It can be deduced that a lack of knowledge or comfort with utilizing technology makes participants feel intimidated about mobile banking:

Participant 25: *"My daughter helps me to buy airtime, electricity and transfer money."*

The non-users of mobile banking did not criticize the application, they only expressed a lack of exposure to it. A lack of education or knowledge about technology use can negatively affect self-efficacy and instrumentality. High levels of self-efficacy and instrumentality in turn lead to a person believing that they can use technology-based services such as mobile banking (Lotfizadeh and Ghorbani, 2015).

#### Theme 7: Perceived risk of using mobile banking services

Risk is the extent to which using a system will result in undesirable outcomes (Null et al, 2011). Performance risk describes the likelihood that the mobile banking application links a user with their bank or fails while they are transacting. All the mobile banking users showed confidence in the performance of the mobile banking application. They believe that they can interact with the bank in real time by using their phones.

Participant 9 stated that *"Yes it has internet to link me with my account."*

Confidence in the systems abilities can be easily shaken:

Participant 31 stated that *"I recently needed to increase my daily limit using my cell phone; it said I should go to the bank."*

The risk of forfeiting privacy describes the likelihood that a person's account can be accessed without their knowledge or that fraud can be committed. The majority of participants that are users have shown confidence in the security measures of their mobile banking channel. They explained that they receive sms notifications about transactions taking place on their account and that their account details are only known to them.

Social risk is the likelihood that a user could lose their social rank when people learn that they use mobile banking or if something undesirable happens, such as losing money. The majority of mobile banking users explained that their friends and families would not understand how a person could lose money because their bank details are secured.

Participant 12: *"No they will not understand, because other people do not know about cell phone banking. They will think I committed fraud or corruption."*

Participants indicated that once people learn that they use mobile banking they will think they are educated and well informed.

Financial risk includes perceptions regarding whether the amount of airtime users spent completing mobile transactions is low, acceptable or high. The majority of the users believe that mobile banking will improve their financial position because travelling costs and bank charges are reduced. The minimum airtime spent is R2 and the maximum airtime spent is R 10, which was acceptable to the participants.

Participant 2: *"Most of the time they say it takes R1.50 but I think R5 is enough. Yes, it is an acceptable cost"*.

Time risk refers to the likelihood that mobile banking transactions take long to complete, or how long it takes to fix an error if one occurs. According to the participants it takes approximately five minutes or less to complete a transaction or fix an error.

Participant 21 stated that: *"It depends on the nature of the error, but it should take more or less than 10 minutes."*

In light of the findings discussed above, the assortment of risks associated with mobile banking are perceived by participants to be low for users of mobile banking.

#### Theme 8: Customers' trust in financial and mobile service providers

Illia, Ngniatedema and Huang (2015) identify trust as a key element associated with the adoption of mobile banking. Trust is described as a psychological expectation that a trusted party will not behave in an opportunistic way (Kim et.al. 2007). All the participants in possession of a transactional account indicated that they trust their banking services providers (ABSA, Capitec, FNB, Nedbank, and Standard Bank) because the banks are honest with their money and understand their needs:

Participant 11: *"Yes, I have used my bank for 17 years without any problems."*

All the people who took part in this study indicated that they trust their mobile service providers because they connect them with friends and family. The most popular service providers used by participants were Vodacom and MTN:

Participant 5: *"Yes, it is reliable. I rely on it for business."*

The findings are an indication that the participants trust both financial and mobile service providers. Therefore, it can be deduced that non-users of mobile banking use traditional bank branches in part because their exposure to, or knowledge of mobile banking services is limited.

## **8. Conclusion**

The aim of the research study was to discover the attitude and perceptions of the residents of Dennilton about mobile banking as a tool for financial inclusion. The study focused on people at the bottom of the pyramid and utilized the TAM model to investigate factors that influence the uptake of mobile banking. Qualitative interviews were conducted to gain an in depth understanding about the mobile banking phenomenon in rural areas. The study focused on participants' awareness and usage of mobile banking, and the hurdles to using mobile banking. Participants who use mobile banking displayed positive perceptions about the ease of use and usefulness of mobile banking, which was visible in their uptake and their positive attitude towards mobile banking. Social factors such as unemployment and technological

limitations negatively influenced the use of mobile banking. Several recommendations follow, aimed at unlocking the potential of mobile banking to expand financial inclusion at the bottom of the pyramid.

## 9. Managerial Recommendations

The following recommendations can be made after the completion of the study:

- The gap in awareness creates an opportunity for industry players to offer financial literacy programmes to the residents of Dennilton and similarly to other rural areas. The financial literacy programme should address basic banking concepts and can teach people about the benefits of mobile banking.
- Financial institutions could improve the mobile banking experience for people with varying education levels and a variety of home languages by employing well designed signs and symbols that can mitigate misunderstandings due to language barriers. This would serve to include more potential users and improve ease of use.
- The majority of participants were unemployed. The banks can consider offering certain mobile banking services for free and/or ensure that transactions use limited data in order to cater to customers who have limited financial means.
- Financial services providers have an opportunity to inform people about the benefits of using mobile banking by rolling out well-crafted marketing campaigns.

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## Exploring the Effect of Social Media Influencers on Buyer Decision Process in Context of Insta-Moms

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### Abstract

Social media is an essential part of peoples' everyday life, leading marketing from traditional marketing towards a more digital marketing strategy. The effectiveness of traditional marketing is being questioned causing marketers to use new digital strategies as influencer marketing, especially after pandemic period. Prior research has emphasized how the influencer marketing is used for ordinary consumers. This research makes its theoretical contribution by combining marketing and the motherhood, which is a social construct as an instinctive process, in social media.

Within this context, the representations of motherhood changes in the context of influential women on Instagram, whom the research refers to as "Instamoms". They have impact on their followers in the motherhood, leading to "ideal motherhood". Moreover, marketing side contributes to the buyer decision process. In the light of the above considerations, the primary purpose of this research is to understand the representation of motherhood in the context of Instamoms, and the impact of these influential women on the buyer decision of follower mothers.

With a consumer centric approach, 30 in-depth interviews, 5 expert interviews, and qualitative content analysis on Instamoms' pages were conducted. The findings investigate the dynamics regarding Instamoms and their followers. In the light of the findings, it can be stated that the representation of motherhood and followers' buyer decision process have an undeniable impact on the follower mothers and contribute to various fields of consumer culture. As conclusion, an alternative model for buyer decision process is presented, and marketing and societal implications are explored.

### Keywords

Marketing, motherhood, consumer behavior, buyer decision process, influencer marketing

## Circular Economy – Requirements for Enterprises towards Circular Products

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### Abstract

The concept of the circular economy is considered a key element to promote the decoupling between the economic growth and the increase in the consumption of resources. The circular concept provides an economic model including the coordination of production and consumption systems in closed circuits, contrary to the linear model in which goods are manufactured and then discarded as waste, and deteriorate the global environment. Based on this changing paradigm, the world faces deep challenges that must lead to a rethinking for enterprises. It cannot be overlooked that there are a lot of huge challenges which enterprises and their organizations have to deal with, such as changing, more dynamic processes, economic compatibility as well as technical requirements in times of circularity.

It is interesting to note that the linkage of human resources management with the circular economy plays a subordinate role in the academic literature. Based on these facts, the paper discusses the preconditions to establish the connection between circular economy and human resources management. First of all, the work presents a general view on circular economy. After that, the intersection between circular economy and human resources is in the focus. Existing models are also discussed. Finally, the work suggests a five-point agenda to establish and promote a more sustainable organization.

### Keywords

Circular economy, human resources management, sustainability, environmental training

## 1. Background and Objectives

In recent years, an increasing number of actors from different parts of business, politics and science have been discussing the approach of the circular economy with respect to structuring and aligning the economic product and material flow in a circular way (Hofmann et al., 2018; Geissendoerfer et al., 2017).

Based on innovative consumption and usage patterns, supported by progressive digitalization, the behavior of consumers, customers and other stakeholders has changed fundamentally. In times of digital media and improved communication, customers and consumers have more information and opportunities for influence than ever before. In today's networked and interdependent world, each of us can control the supply chain to a certain extent. Customers and consumers use their orders to trigger supply chains and thus determine which products will be produced. This pattern of behavior plays a decisive role, and describes how people deal with the products and the residues. Thus, retail product ranges change in ever shorter intervals in order to respond faster and more flexibly to customer requirements, or to differentiate themselves from the competitors to gain a competitive edge (Lehmacher, 2015). Moreover, the global population boost will impact the economic growth and the standard of living. It is predicted that the population will double by 2072, and the gross domestic product will increase fivefold (Asif et al., 2012). The challenge will then be the natural resources, which are known to be insufficient for this exponential growth, and the earth's reserves and the ecosystem that are facing more and more threats. This population burst will lead to an increase in the resource consumption multiplying tenfold (Asif et al., 2012). Increasing consumption causes unpredictable commodity prices and uncertainties in the supply chain as well as global warming and climate change. Catastrophic phenomena like thunderstorms, tornadoes or monsoons as well as rising temperature, cloudiness, humidity, precipitation or winds are elements that are responsible for shifting weather patterns. These impacts can also be seen to have a negative influence on food productivity (especially on fields with cereal grains), in that melting glaciers are connected to rising sea levels and increased risk of flooding. Human health and the stability of the ecosystem are also influenced by climate change. One fundamental cause is the activity of humans. Carbon dioxide (CO<sub>2</sub>) and other greenhouse gas emissions, which arise from burning fossil fuels, are the main drivers propelling climate change. Methane, nitrous oxide and halocarbons are further contributors from human activities (Adedeji, 2014; Aizebeokhai, 2009). Peng et al. (2004) confirm this statement and found that the global mean surface air temperature increased by approximately 0.5 °C in the last century, and from 1.5 °C up to 4.5 °C is the forecast for further increase in the present century. Even a small rise in mean annual temperature can have a major impact on the ecology and biological diversity of our planet (Adedeji, 2014; Geng, 2011).

A few factors jeopardize the current situation in our earth's life support system. On the micro perspective, enterprises "fight" against supply risk, problematic ownership structures, deregulated markets and flawed incentive structures. This leads to increasingly recurrent issues such as challenges in the economic and financial sector of the organization (Geissendoerfer et al., 2017).

Based on these different and complex uncertainties along the supply chain, enterprises must design new supply chain structures, act in cooperation with other enterprises, and develop effective business models (Nyhuis et al., 2014).

With the first economic model of natural resources and the environment, Pearce and Turner coined the term “circular economy”. In contrast to the traditional linear models of economy, the concept of the circular economy is aiming to harmonize ambitions for economic growth and environmental protection. In comparison to the linear supply chain (resource – product – waste) which describes the steps from resource extraction to its consumption, the focus in the circular economy is on waste prevention as well as reuse of resources. The major goal in the circular economy is zero waste. Reduce, Reuse and Recycle underline the concept of sustainable development - a departure from the traditional economic model. Already in the early stage of the development process, from the procurement of raw materials, towards production processes right up to the distribution and the re-use of defective products, parts or materials are the focus, to build up a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops (Lehmacher, 2015; Geissendoerfer et al., 2017).

To consign these different facets, the topic of circular economy is now becoming one of the most fundamental issues of our time, visible through an increasing amount of academic research going into it. Policy makers, enterprises and other stakeholders are also aware of the opportunities of the circular economy and have announced that they want to implement this valuable potential for their own company and their partners along the supply chain (Brennan et al., 2015; Ellen MacArthur Foundation, 2013).

In academic literature, most papers on circular economy research topics like (Jabbour et al., 2019):

- Operations management,
- New technologies,
- Barriers,
- Indicators, limitations and economic aspects.

On closer inspection, it remains unclear how an organization achieves such sustainability, even though human resources management of organizations has been of interest to scholars for decades. In order to implement sustainable, circular supply chains, it is critical to observe the human element, to create awareness, to motivate and qualify people for their specific roles and contributions. As mentioned above, the link between human resources management and the circular economy concept has been largely unnoticed (Daily & Huang, 2001; Schröder, Lemille & Desmond, 2020).

This paper discusses the current role of the human resources management with the focus on the circular economy. It highlights the present state of research, and furthermore identifies activities which enterprises have to perform in order to enable circular economy through human resources management.

## 2. Human Resource Management as an Enabler for Circular Economy

The following chapter illustrates the evolution of the circular economy paradigm and highlights the intersections between both topics. Consequently, selected existing models are presented.

### 2.1. The origin of circular economy – a short introduction

Due to economic developments and increasing competitive pressure, the optimization of the enterprise processes was gaining importance in research and industrial practice, and nowadays, supply chain management is the bedrock in each enterprise to run a successful business (Póvoa et.al, 2018). On top of this, efforts have been made to reduce the negative consequences of production and consumption processes on the environment with green and sustainable supply chain practices over the last decades (Nasir et al., 2017; Genovese et al., 2017).

In parallel, the circular economy discourse has been propagated in the industrial ecology and production economics literature and, lately, in business and practice as economic and production systems cannot be separated from each other and from the environment. As mentioned in the first chapter, human activities are one of the many impacts on nature (Nasir et al., 2017; Harte, 1995). These novel perspectives have led to many new areas of interdisciplinary research (Harte, 1995), and to a sustainable resource management approach that includes circular strategies as part of a toolbox of options (Brennan et al., 2015). Based on the overconsumption of natural resources, ideals of circular economic principles suggest that the frontiers of environmental sustainability can be pushed by emphasizing the idea of transforming products in such a way that there are workable relationships between ecological systems and economic growth (Rizos, Tuokko & Behrens, 2017; Nasir, 2017).

The first economic model of natural resources and the environment appeared in 1990 by Pearce and Turner and simultaneously the term “circular economy” was born. The main thoughts of the researchers were formulated on the principles of the first and the second laws of thermodynamics<sup>1</sup>. They based their model on three economic functions of the environment which are resource supplier, waste assimilator and source of utility. Again, here the overconsumption and the growing ecological deficit are at the center of the paper (Rizos, Tuokko & Behrens, 2017; Genovese, 2015). Pearce and Turner designed a circular model of economy. The linkage of resource flow and economic issues in contrast to the linear models (traditional production process) is highlighted (Schrödl & Simkin, 2014).

Over the last decades, a huge amount of literature has come up with different disciplines that influence the knowledge of the circular economy (Lieder & Rashid, 2016).

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<sup>1</sup> “The first law of thermodynamics stipulates that neither energy nor matter can be created or destroyed and therefore any natural resources used will return to the environment in the form of solid waste or emissions. According to the second law of thermodynamics, there are physical boundaries that prevent the set-up of a system in which all waste is recycled and transformed back into natural resources with 100% efficiency” (Rizos, Tuokko and Behrens, 2017).

Alongside these efforts, the discourse about circular economy has continued over the last decades (Genovese et al., 2015). “Circular economy” has the objective to push the frontiers of environmental sustainability and simultaneously to boost the relationship between the ecological systems and economic growth. Self-sustaining production systems in which manufacturing materials are used over and over again, as well as sustainable production systems which could be re-used, are the major targets and challenge for the enterprises. In other words: Circular economy increases the efficiency of resource-use with a special focus on urban and industrial waste to further achieve a better balance and harmony between the economy, environment and society (Ghisellini et al., 2015). Ying and Li-Jun (2012) have defined circular economy as an ecological economy which involves human economic activities. The researchers bring the circular economy in line with 3R principle, which stands for: Reduce, Reuse, Recycle<sup>2</sup>. Thus, they underline the concept of sustainable development and walk away from the outdated linear economic model like resource – product – waste. They concluded that an enterprise gains maximum economic and social benefits with minimal resource consumption and environment costs (Ying & Li-jun, 2012). Andersen (2007) confirms this statement and highlighted that it is important to minimize the use of virgin materials for economic activities, and use residual materials.

According to Geng and Doberstein (2008) circular economy is the “realization of closed loop material flow in the whole economy system”. Another definition by Stehel (1982) stated that circular economy is “an economy based on a “spiral-loop system” that minimizes matter, energy-flow and environmental deterioration without restricting economic growth or social and technical progress”. A more current definition is from Lieder and Rashid (2016). Based on the limitations of the linear economy, “the concept of the circular economy (CE) is considered as a solution for harmonizing ambitions for economic growth and environmental protection”. For further reading, an overview of definitions and interpretations is included in the research report of Rizos et al. (2017).

## **2.2. Intersection between circular economy and human resources**

Once again, from an academic perspective, the amount of publications related to circular economy in academic journals has increased fast. Many topics (definitions, goals, barriers, business models, limitations etc.) of the circular economy paradigm were well discussed. To describe circular economy in few words, is the concept to accomplish sustainable development through increased resource efficiency. It explains environmental quality, economic development and social equity with the target to protect the environment and prevent pollution as well as to manage future generation needs.

Surprisingly insignificant is the role HR management plays in the debate about circular economy. These two fields are largely separate areas of knowledge although HR management has been of interest for many years in the academic literature. Some research on the links between circular economy and HR management have already been started. Jabbour et al.

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<sup>2</sup> Reduce is defined as reducing the number of materials which are needed in the process of production and consumption; Reuse is defined as the extension of the life cycle of products; Recycle refers to the re-use of materials as well as the regeneration of renewable resources

(2019) summarized, based on an article from Hopkinson et al. (2018), that the “human side” is closely related to and can be considered a key element of any circular economy initiative. A commonality lies in the origins of the circular economy and the human resources approach. As mentioned above, the circular economy emerged as the successor of the traditional linear approach which, similar to human resources, tries to reduce poverty and improve human well-being. Resource consumption, pollution and a high volume of waste are formative for the traditional, linear economic model.

A significant milestone is the Human Development Report (HDR), an annual Human Development Index report published by the Human Development Report Office of the United Nations Development Programme (UNDP). Herein, three dimensions of human well-being (Schroeder et al., 2020; UNDP, 2019) are defined, with corresponding indicators and dimensional indexes:

- Long and healthy life
- Knowledge
- A decent standard of living

The indicator for the health dimension is assessed by life expectancy at birth. Knowledge is based on years of schooling, and standard of living is measured by gross national income per capita. During this time, the center of sustainability lies on maximizing value from resources and re-use of residues.

The Global Assessment on Biodiversity and Ecosystem Services (2019) also reported synergies between circular thinking and human resources. Education, gender equality, reducing inequalities and promoting peace and justice are suggested. The results can also be seen in the concept of the circular economy but, they are however, largely neglected (Schroeder et al. 2020).

Neumayer (2012) went back to the 18<sup>th</sup> century. He traced Kant at the heart of the concept of human development, with universalism requiring “granting the same kind of attention to future generations as to the current one”. Anand and Sen (2020) confirmed this statement in connection with the sustainability concept of circularity from the 21<sup>st</sup> century that “sustainability is simply a matter of distributional equity, about sharing the capacity for wellbeing between present people and future people”.

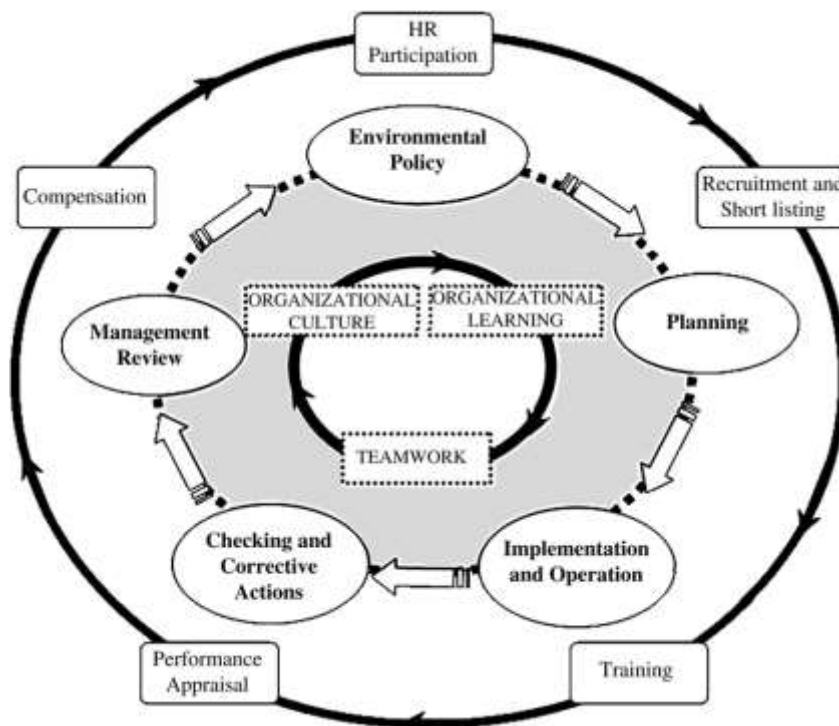
Schröder et al. (2018) investigate the 17 Sustainable Development Goals (SDGs) which were defined by the United Nations. He examined the relevance of the circular economy approach for achieving the UN Goals. These goals consider the “triple bottom line” with three dimensions of sustainability – social, environmental, economic – and apply to all countries in the world: industrialized, emerging and developing countries. The population of all countries have a shared responsibility for the world. The set of SDGs encompass the entire spectrum of sustainability issues, from higher educational attainment, to reducing income inequality between men and women, to securing social housing, to trade opportunities for so-called developing countries (Martens & Obenland, 2017). Schroeder et al. (2020) and Schroeder et al. (2018) deliver an overview of gaps and issues relating to the social dimension. For example, some of the goals are lacking a suitable framework to assess potentials. They conclude that

human development relates closely to the SDGs, and further that linking circular economy and human development offers an avenue forward.

### 2.3. Selected models in literature

Jabbour and Santos (2008) presented a model that analyzes the relationship between human resource dimensions and their contributions to the effectiveness of the environmental management system, with the intention to support academics and managers.

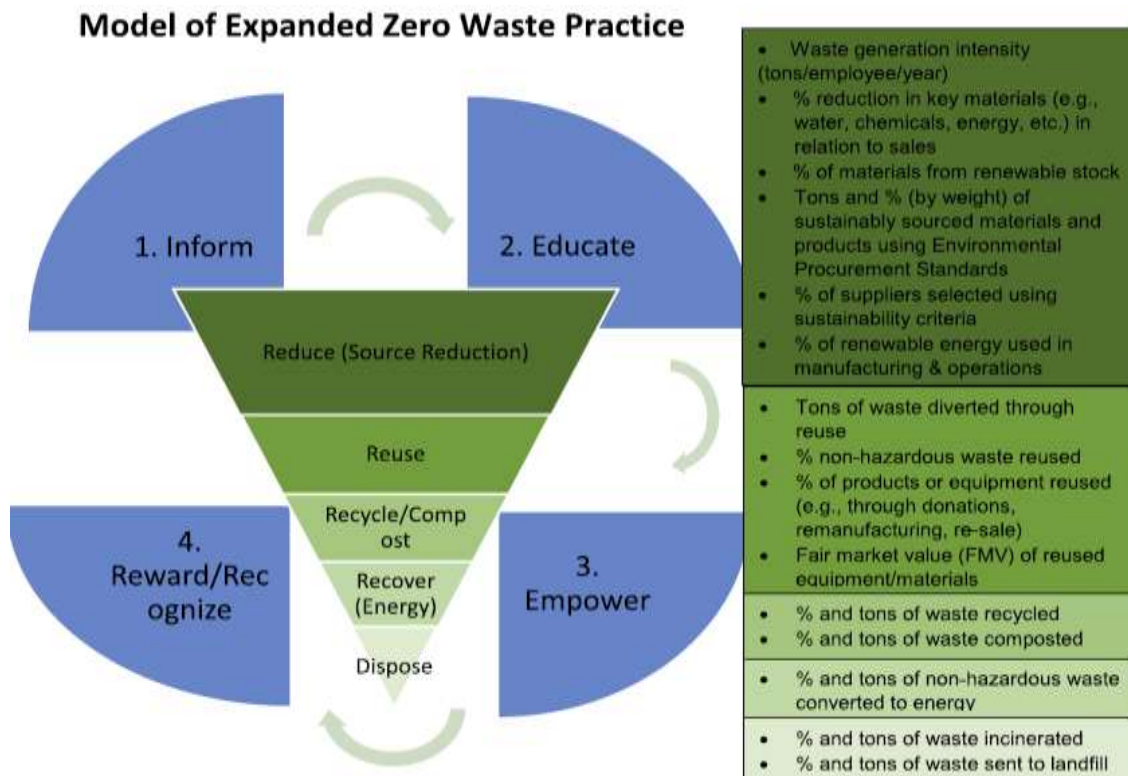
Figure 1: Contribution of human resources for environmental management<sup>3</sup>



The researcher figured out that teamwork, organizational culture and organizational learning have a crucial role to support the environmental management system. They suggested to reinforce these factors of effectiveness for enterprises. The model delivers a better understanding of the interaction between human resources and sustainability for enterprises. The second model is from Veleva et al. (2017). They define a model for “Expand Zero Waste” in practice. It includes additional indicators for measuring outcomes and impacts of circular business strategies, where employee engagement is seen as a critical strategy for identifying and implementing innovative sustainability approaches and initiatives. The indicators are designed to communicate the significance of reduce and reuse compared to recycling and waste-to-energy recovery. Additionally, the model provides guidance to track employee engagement.

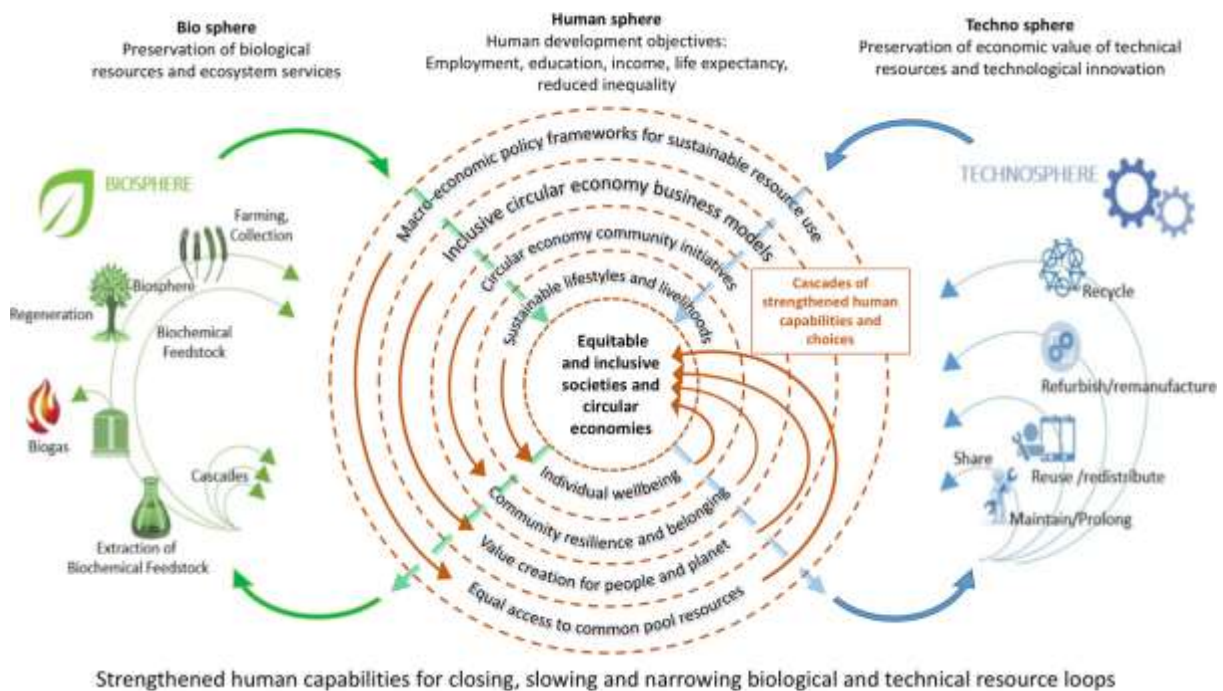
<sup>3</sup> Jabbour & Santos (2008); pp.: 56

Figure 2: "Zero Waste Model"<sup>4</sup>



Schröder et al. (2020) combined the current Human Development Index with a proposed Circular Economy Index. This approach provides an integrative conceptual framework. The basis for this framework is the “butterfly diagram” from the Ellen MacArthur Foundation, expanded with HD objectives. The model includes the “circular humanshere” which encompasses the elimination of waste but goes a step further towards eliminating poverty and tackling inequalities at the same time.

<sup>4</sup> Veleva et al. (2017); pp.: 562

Figure 3: Combining human development with circular economy<sup>5</sup>

As already discussed, humans have a crucial role, as well as a strong influence regarding circularity. The model of Schröder et al. (2020) takes this as an opportunity to put humans at the center in the model. Humans take the responsibility for inputs and outputs as well as inflows and outflows of the circulation.

### 3. Circular Economy Supported by Human Resources Elements

Thinking in circularity has a long history and is well established in the industrial metabolism (Cayzer et al., 2017). As mentioned in the chapter above, circular models were built on a foundation of decades of research. The integrated vision that focuses on long-term change or transition coming out of the circular economy will lead to new business models and value chains. Scientific authors highlight that an in-depth and comprehensive understanding of the “new thinking” is required (de Mattos & de Albuquerque, 2018; Kirchherr, Reike & Hekkert). Daily and Huang (2001) stated that the industrial growth over the last centuries has brought a higher standard of living, but this growth has often come at the cost of the natural environment.

The growing global environment concerns call for environmental strategies and programs for enterprises as indispensable components for future activities. Enterprises have to implement a strategy in their business, to counter the internal and external drivers and, in the long term, to gain a competitive edge. Human resource organizations have to manage the transition towards a circularity. This requires new approaches. A different thinking is necessary to reorganize the set of skills, knowledge and competences within the organization. In the new

<sup>5</sup> Schröder et al. (2020); pp.: 6

paradigm, employees (workers all the way up to the top management level) need to develop a long-term and interdisciplinary thinking in order to perform their jobs in a sustainable and environmentally aware way (Dibia et al. 2020). "Creativity, consciousness and proactivity can strengthen the human resources' capacity and competences." (Alese, 2018) .

The development of the human resources according to circular economy principles is an important precondition for a sustainable and competitive economy. The following human resource factors are based on an intensive literature search. The suggested elements help to create sustainable thinking in an organization.

As pointed out in the introduction and as a result of the presented models in the previous chapter, the focus lies on the human resource factors which play a decisive role in the internal value chain of a company. These elements have not been systematically presented in the literature. Hence, the following section describes the basic factors to link elements from the circular economy with factors of the environmental perspective.

### **3.1. Top management support**

If we see the implementation of HR management aligned with circular economy as a project, top management support is the most critical factor for project success. According to Young and Jordan (2008), boards and top managers have a personal influence on whether a project succeeds or fails. This statement is not new in the academic literature and has often been discussed. Managers love empowerment in theory but mostly operate in the command-and-control model (Argyris, 1998; Young & Jordan, 2008).

Wilms et al. (1994) confirm the management's influence on employees. They describe that people will follow management's directives. It doesn't matter what the management does; what direction they push, and how hard they push dictates where their company eventually goes.

Cultural change towards an economical thinking does not happen overnight but requires long periods of time to evolve. When the top management of an enterprise wants to change the organizational culture, they have to follow some principles; define their own organizational culture in order to be more flexible and responsive to changes (Daily & Huang, 2001). First of all, the environmental program, e.g. the implementation of a circular economy program should be communicated to the workers. The employees should be informed about the policy, the program, initiatives, goals and relevant information. It is of utmost importance that management ensures a constant flow of information to the work force (Wilms et al. 1994). Second, the enterprise should support cultural change for the implementation and operations. Third, reward systems should be implemented and the enterprise also needs to think about how to empower its employees. Finally, it is a prerequisite to install a work-in-process review of the program (Daily & Huang, 2001).

### 3.2. Environmental training

The terminology of “environmental training” is defined as a systematic organizational process that gives employees the knowledge, attitudes, and skills to help organizations implement their missions and visions. The idea is to train employees to take environmental action (Jabbour & Santos, 2008). Wagner (2011) investigated firms in the German manufacturing sector at two different points in time (2001 and 2006). He summarized that the percentage of companies that had adopted environmental training had increased. The percentage was raised by approximately 19 %. On the other hand, the training had become less important. He also found out, that the most stable determinant during this time is the firm size which is positively correlated with the presence of environmental training.

As mentioned above, the scientific discussion on the exchange between human resource management and sustainability is slowly progressing. On the other side, environmental training has got more attention from scholars and practitioners (Jabbour, 2013; Donmez-Turan & Piwovar-Sulej, 2021). In general, it can be concluded, that sustainable management depends on a wide range of organizational resources and not only technological initiatives. The training for successful environmental activities is crucial in each enterprise (Jabbour, 2013). It is a priority because the companies can contribute little to sustainable development without it (Agenda 21, 1992).

Appropriate training is the main instrument of human resources development which means a systematic development of the knowledge, skills, and expertise required by a person to effectively perform a given task or job. This is absolutely necessary as the sensitivity of individuals to protect their environment, is closely related to their level of environmental knowledge (Piwovar-Sulej, 2021; Donmez-Turan & Kiliclar, 2021). If the workers of an enterprise do not know the positive impacts of pro-environmental behavior, the individuals cannot be expected to display this kind of behavior. Hence, environmental knowledge is one of the most central factors for influencing environmental behavior. De Groot and Steg (2009) explain that when an individual does not exhibit environmental behavior, the person realizes that this will create problems and accepts responsibility for actions taken, leading him/her into believing that pro- environmental behavior will contribute to reducing environmental problems, thereby creating individual norms.

Environmental training is necessary to build an environmentally conscious culture. Employees enlarge their education and also become more aware of the need for quality and sustainable control, enhance their adaptability to change, and change to a proactive attitude. Enterprises, among others, get a benefit to deal with new environmental operations; they get a positive public image, and improve employee motivation to participate in sustainable management (Daily & Huang, 2001).

### 3.3. Employee empowerment

According to Singh and Singh (2019), human resources development is the most i component that affects the productivity of an enterprise most. Veleva et al. (2017) confirm this statement, and also highlight that employee empowerment is critical for identifying and implementing

innovative approaches and initiatives. In the context of circular economy, practitioners and organizational researchers have the same opinion. The importance of human capital through employee awareness, engagement policies and practices, as well as environmental training/developmental programs rises continuously (Veleva et al., 2017; Teixeira et al., 2016). Ricciardi et al. (2016) also emphasize the importance of employee empowerment, by remarking that this is a fundamental requirement for the successful implementation of the circular economy process. A study from Qureshi et al., (2015) found out, that employees who have more sense of control over their work and are engaged in the decision-making process, are more likely to be concerned about all dimensions of the product and process improvement during the manufacturing process. For example, Daimler AG elaborated a “HR Strategy 2025”. In this strategy, the manufacturer sees its employees relationship more than just an ethical and legal requirement. Daimler reported that the enterprise is largely dependent on the skills and the commitment of their employees. Improvements and innovations are driven by the workforce (Daimler, 2019). In the literature, there are countless examples to be found, with the message that employee empowerment is an important foundation for a successful business.

Daily and Huang, (2001) quote an interview of Argyris (1998) in which a CEO said: “No vision, no strategy can be achieved without able and empowered employees”. Hence, great importance is attributed to HR management. The HR department can motivate employees towards sustainability and integrate the workforce participation in projects by empowering them. HR management could also bridge work initiatives with the top management of the enterprise and with the employees to formulate common green work initiatives. They can discuss together to formulate new ideas and highlight additional tasks. As a result, the HR department should design a performance appraisal system of employees, by integrating behavioral and technical skills related to environmental sustainability (Ghoury et al. 2020). While sustainability projects are, in most of the cases, difficult to handle, there is a different set of skills to implement, which builds the roots for teamwork.

### 3.4. Teamwork

In 2018, Daimler published a “Sustainability Report” in which the “conversation of resources” as well as “integrity, people and partnerships” takes a central role. As an example, Daimler published in their report a training program for a number of employees. The program covers, among other things, the topic of sustainability. Interestingly, HR management is involved in, more or less, all activities, “and we act as one team”. In the annual report of 2019, Daimler names HR the foundation for all further activities. This is rooted in the HR Strategy 2025 (Daimler, 2018; Daimler 2019). In academic literature, teamwork plays a decisive role as well. Teamwork takes an imperative function for environmental performance (Daily et al. 2011). The number of positive arguments is virtually innumerable. To name just a few aspects (Daily & Huang, 2001), teamwork:

- effectively promotes cooperation and problem solving
- facilitates discussion of complex tasks
- enables generation of ideas
- helps to pursue the best practicable environmental options
- supports a thorough exploration of issues

- requires identification of conflicts and focus on an action plan

In general, teamwork offers a wide range of benefits for enterprises and should therefore be strengthened. The paper by Dangelico (2015) structured the benefits as follows: organizational performance, team member attitude and behavioral outcomes, financial performance and manufacturing performance. A further argument to implement a “green team”<sup>6</sup> in an enterprise is environmental reputation. Teams with a sustainable vision evolve over time. They get in contact with external stakeholders, supply chain partners, government (officials, functionaries), customers, and communities, and extend their sustainable efforts in this manner, and get more visibility in the public (Dangelico, 2015).

Teamwork is, additionally, a critical success factor for Industry 4.0 and circular economy. To ensure success and competitiveness, as well as supporting a change process in an enterprise, teamwork is indispensable. A team of an enterprise has the strategy to achieve a common objective. Organizational units and partners along the supply chain are linked to each other, which is similar to the Industry 4.0 process. The “green team” could share the values of circularity with all employees (Jabbour et al., 2018).

### 3.5. Rewards

Many authors reported about well-designed reward systems for enterprises and the significant contribution these systems provide to employee motivation and organizational performance. Many examples indicate that motivated employees tend to demonstrate improved performance, which is strongly connected to the performance of an enterprise. Based on that, it can be concluded that rewards for sustainable projects have a positive effect on environmental performance (Massoud, Daily & Bishop, 2008). Hence, reward and compensations encourage an open-minded behavior in employees regarding an environmentally-friendly targeted company. Additionally, when enterprises implement a reward system in their company’s philosophy, the workers enhance their environmental commitment, as well as the responsibility to take ecological initiatives rises (Ghoury et al. 2020). An interesting thought is proposed by Ahmad (2015) that green rewards can also be used to bring green creativity and innovation by providing reward-based opportunities to employees for suggesting green work ideas related to their jobs. The practical execution could be in forms of financial rewards, profit-sharing programs, increase in pay, promotion, to name some of them (Ghoury et al. 2020). On the other hand, researchers have suggested that enterprises commonly do not have a reward system for improved performance which is based on sustainable effects. Massoud (2008) reports infrequent monetary incentives and discusses the question why rewards are not more common in environmental management; he also suggests that there is a need for an environmental reward strategy. The researcher sums up that an environmental task usually cannot be tackled by an individual. He underlines the team-oriented and multi-level topics approach of circular and sustainable product strategy.

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<sup>6</sup> Green teams are defined as follow: Green teams are a groups of workers, who solve environmental problems or topics. They develop programs with the aim to enhance sustainable performance (Laabs, 1992). The teams use benefits of recycling, waste minimization and composting. Another definition is formulated from Bray (2008) which can be found in the document of Dangelico (2015). The researcher defined green teams as „groups of employees helping to identify and implement specific improvements to help their business operate in a more environmentally sustainable fashion”.

Therefore, enterprises must measure environmental metrics at the organizational or departmental level.

As a solution to this problem, gainsharing plans are a promising form of collective rewards for sustainable performance. A group of employees who are responsible for, for example, in-cost, quality and productivity, get a share a portion of the realized gains that results from this project. (Massoud 2008).

#### **4. Conclusions, Limitations and Perspectives**

Over the past decades the circular economy model has been promoted quickly in each field in our business environment. The model substitutes the traditional, linear economic approach in which products are developed, manufactured, used and eliminated with a remarkable loss of value. The concept is needed due to the limited availability of natural material resources; the need for protecting the natural environment; and to support sustainable business development. According to Ghisellini (2016), the circular economy can be seen as an intermediate goal. The main objective of the circular economy approach is to decouple the economic growth from the resource consumption.

The circular economy paradigm, as an administrative instrument that is spread in companies, the connection of two highly relevant topics in the academic literature and not only to discuss both topics, circular economy and human resources development separately. As shown, these two topics in most studies are hardly ever discussed in an interconnected manner. The paper proposes a more integrated research. This work elaborates on the basic principles of the circular economy and points out a number of related historical and current approaches. Finally, the work presents five bridging factors (top management support, environmental training, employee empowerment, teamwork, and rewards) to attain a more sustainable approach in an enterprise. These five factors are of crucial importance. These elements should be carefully managed when an enterprise aims to combine circular economy projects with human resource management. Through a sophisticated system of circular economy in combination with human resources management environmental sustainability could be boosted. Enterprise processes, circular products, and closed-loop supply chain can be under sustainable "control".

The two domains of circular economy and human resources in combination should be further analyzed by researchers and industrialists. The combination of both topics should be fully understood, especially the role of human resources critical factors linked to circularity. It must be clarified which business model must be supported in human resource practices, and which are the most decisive enabling enterprise sustainable performance or which reward system is the best and most sustainable system.

The study has several limitations. First, the work is not focused on a special field of the circular economy or human resources. Future research should include a defined area. Secondly, due to the limited time and resources, the study and results were based only on the academic literature. Further research should consider a practical case study in an appropriate enterprise to get an idea how to implement the suggested factors from human development. While a

growing number of enterprises have made a commitment to implement a sustainable program (Veleva et al., 2017), the gap between both topics has to be closed. And thirdly, the implemented methods in the enterprise should be evaluated, including methods for the training, and team development necessary to deal with sustainable projects. The human resource dimension is closely linked to sustainability and especially to circular products. For this reason, the selected five topics are the basis for long-term effectiveness and efficiency to gain a competitive edge for an enterprise.

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## **Perception of Green Communication by Moroccan Motorists - Exploratory Study at Service Stations in the City of Marrakech**

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### **Abstract**

Communicating on the environmental actions has become crucial since companies need to convince the consumer of the legitimacy of their actions, but also to adjust to the growing environmental concern of stakeholders. Green communication started to materialize with the appearance of environmental issues in marketing during the 1970s with the first recyclable packaging, phosphate-free detergents and fuel-efficient cars. Later on, this communication has been widely used in new sectors such as the oil industry. Thus, the use of green communication in this field is widely controversial and still divide researchers and consumers as to the real motivations for its implementation, since its accused to give a “greener image” to a highly polluting industry. In this paper, we seek to explore the perception of green communication within motorists, who are the direct consumers of retail petroleum products at gas stations. A qualitative study based on semi-directive interviews targeting 27 motorists in the city of Marrakech allowed us to get closer to the perception of these consumers and to identify the main elements that impact their perception.

### **Keywords**

Green communication, perception, retail oil sector, polluting industry, motorists

## 1. Context and Interest of the Research

The changes that the managerial world has undergone have pushed companies to revise their marketing strategies while adding CSR variables. Marketing has become an essential lever for the development of CSR commitments of companies, insofar as its objective is to satisfy the needs of consumers specifically, and of stakeholders more generally (Massiera & School, 2011). Thus, the company sees itself turning its attention not only to the consumer (classic vision), but also seeks to deliver value to its various stakeholders. Communication has always been the preferred means for companies to position themselves and express their commitment to the environment.

Moreover, they are moving more towards the adoption of sustainable development and CSR themes in their speeches (Swaen, 2009). Starting from this point, green marketing has become an important asset for companies and an essential tool to promote their engagement toward the environment. Polonsky and Jay (1994) states that green marketing "is based on all activities defined to create and facilitate any exchange whose objective is to satisfy human needs and desires; this satisfaction has as an obligation to minimize the negative impact on the natural environment". For Boyer and Poisson (1990), it's "the secret of the integration and not the implementation of the "ecological" variable at the heart of the marketing plan". Thus, it is undeniable that green marketing has a crucial role in the success and the good realization of the marketing strategy using green communication that helps to enhance companies' ecological arguments.

Green communication aims then to "communicate on the company's and on their environmental commitments" (Audoin et al., 2010). Its actions are inspired by social responsibility, seeks not only to impact consumer behavior but also that of companies (Swaen & Chumpitaz, 2008). Despite the interest in green communication, various voices raised to claim the strategies deployed in this direction. The positive perception of this communication is tainted by the lack of credibility and transparency of certain communicators, leaving consumers confused and unable to distinguish the false from the true (Stokes, 2009). Indeed, certain controversial sectors such as the oil industry are often singled out for the use of this type of communication. Also, regardless of usage, this communication is likely to create confusion in the mind of the consumer.

According to Mitchell et al. (2005), this state of confusion generated by cognitive dissonance is characterized by the difficulty of consumers to understand the various arguments put forward during the promotion of a product or brand. This situation can affect consumers' ability to make decisions due to the communication of ambiguous information. In Morocco, there is a tendency to reassure consumer-motorists through the green communication arguments used by oil companies. In this article we aim to explore the perception of these consumers of retail oil products by answering the following question: *"How is the green communication perceived by motorists at gas stations in the city of Marrakech?"*

To answer this question, we will first clarify the main variables of our article in our literature review. Since this is a new issue to explore in Morocco, and due to the lack of information about the subject, we will adopt an explorative vision. In fact, exploratory research can aim to clarify a problem that has been more or less defined. Thus, we will use the qualitative

approach in order to understand the perception of the Moroccan motorists. It is important to note that this study took place in the gas stations of the city of Marrakech. Finally, the analysis of our study will allow us to present the most convincing results.

## **2. Literature Review**

A majority of consumers have become aware of environmental issues, thus the companies' challenge is to find a way for marketing to meet their needs in an engaged way without falling into the trap of misleading communication. In order to satisfy this category of consumers, ethical arguments are integrated into the different stages of the marketing process: from the creation of the message, to the positioning, through the promotion and production of the product, and also by defining its intrinsic characteristics to give the credibility and justify its capacity to meet the expectations of the target. Indeed, to translate these values, companies have resorted to green communication. In this first part, we will define the notion of green communication while focusing on its application to the so-called "controversial sectors".

### **2.1. Focus on green communication**

Practically speaking, ethical arguments are exposed through this green communication and are integrated in the different stages of its process: from the conception of the message to its positioning, through its launch in order to enhance its intrinsic characteristics that give it credibility and justify its capacity to satisfy the target's expectations. Therefore, when we talk about green communication, it is above all "an institutional communication that provokes the civil conscience of each citizen, and that emphasizes the elements (performance, conduct, strategy, culture, governance, ethics, and value)" (Debos 2005). Subsequently, several companies have attempted to launch a green communication strategy, which, according to De Backer cited by Mühlenhöver (2002) "helps to control the public's sense of fear about the company's activities by demonstrating that the complex process is indeed in expert and motivated hands and is aligned with integration into the ecosystem".

Like traditional communication, green communication is based on commercial communication strategies (consumer-oriented) and institutional communication strategies (Thøgersen, 2000) that allow the company to justify its approach to its stakeholders. It also helps to inform the consumer, green communication presents a real lever for managerial development of the company internally and externally (Ladraa & Ben Moussa, 2019a). For Naja (2016), convincing the public of the veracity of its statements requires that the company choose an environmental cause that fits with its image, and considering the various current issues it faces. In no case should the company communicate in a crisis, otherwise its message will be perceived as manipulative. Also, the proposed product must respect the environment from its conception to its marketing, but also through its communication. This is important to ensure an ecological image distinguished by transparency and trust (Peattie & Crane, 2005).

## 2.2. Communication and controversial sectors

The risks of drift and attack can be high, especially in areas where environmental or social impact is most affecting and for leading or monopoly companies and brands, ubiquitous within the public space (Chen et al., 2014). Also, a new term is making its appearance and is increasingly repeated, especially when discussing controversial or risky sectors: "greenwashing".

In recent years, academic attention to the phenomenon of greenwashing has grown in importance, it has become more prominent (Lyon & Montgomery, 2015). This phenomenon assumes that the consumer is presented with false claims regarding the environmental commitment of environmental commitment. This misleading use of communication could thus create a real gap between the information disseminated by the company and its actual environmental performance (Font et al. 2012). In order to counter these charges, industrialists have begun to alert consumers to the various risks they face by associating their image with environmental associations while communicating about the various green activities carried out (Ladraa & Ben Moussa, 2019b).

When faced with green communication, consumers do not always activate their knowledge of belief (Wentzel, Tomczak & Herrmann, 2010). This is relative to the degree to which the consumer infers that the intermediary's desire is to manipulate them (Wentzel, Tomczak & Herrmann, 2010) or, in other words, to convince them through unsuitable, unfair, and manipulative means (Campbell, 1995). If the consumer perceives that the communication intermediary is concealing manipulative intentions, he or she will observe his or her statements with more doubt (Fein, 1996, cited by Campbell & Kirmani, 2000). As a result, the individual is more likely to perceive the intermediary as less sincere (Campbell & Kirmani, 2000). Thus, if the temptation to manipulate is seen as prominent by the consumer, he or she is likely to activate their knowledge of persuasion.

In this position, the consumer may become resistant to the arguments of the communication, which will reduce the performance of the communication process (Campbell & Kirmani, 2000; Carlson, Bearden & Hardesty, 2007, cited by Wentzel, Tomczak & Herrmann, 2010; Cottet, Ferrandi & Lichtlé, 2008). That said, CSR communication is often subject to this process by the consumer. According to Bhattacharya, Du & Sen (2010), stakeholders agree negatively with CSR strategies that they find manipulative. This occurs when the company abuses green communication to fabricate a fictional perception of the real world that passes for truth in the consumer's mind (Vargas, 2009). In this way, companies do not hesitate at times to portray a greener image than they actually are (Vargas, 2013) in order to convince consumers of their green credentials and to increase their consumer target (Breka & Kpossa, 2013).

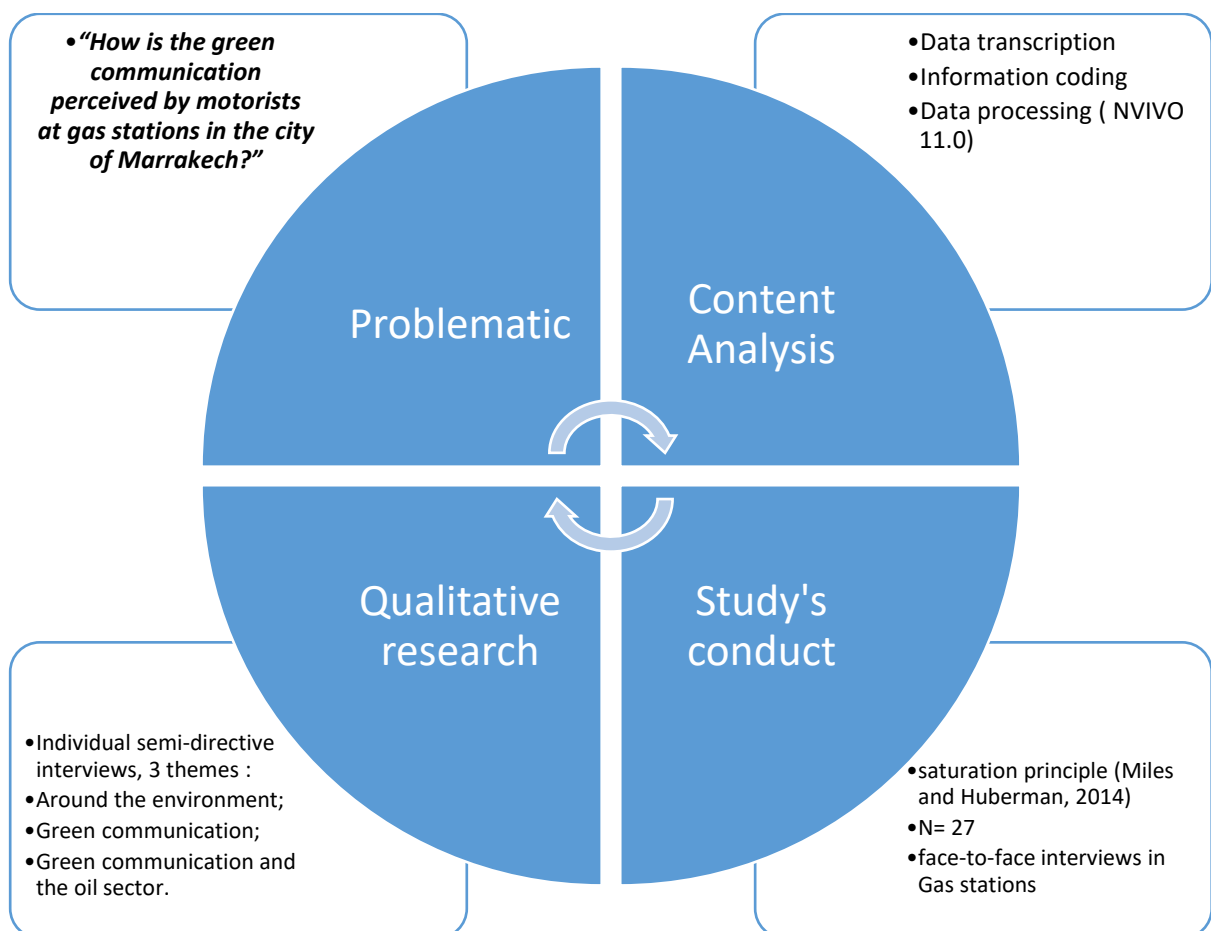
## 3. Research Methodology

The purpose of our research is to collect the consumer-motorist perception of green communication and its implementation at the petroleum sector level, therefore a qualitative study is ideal to achieve our aim.

For Miles and Huberman (2014), qualitative sampling is based on theoretical and not statistical representativeness. In addition, the saturation principle allows for the collection of information while avoiding redundancy. Following these two principles, our baseline sample size was difficult to define from the start, requiring decoding after each interview to ensure that we balanced our theoretical goals with empirical saturation.

Information began to become redundant by the 25th interview, and the addition of two more interviews was necessary to ensure that we reached empirical saturation in our study. Thus, we interviewed 27 motorists at gas stations in the city of Marrakech. The semi-structured interview is facilitated in a flexible way by the interviewer, who asks open-ended questions aimed at encouraging the interviewee to describe his or her social reality, how he or she thinks, his or her present or past experience, while paying attention to the interpretation of the meaning of the phenomenon under study (Kvale & Brinkmann, 2009; Poupart et al., 1997). Furthermore, since the interview was conducted face-to-face in a public place (gas station), we tried to formulate questions that were direct and simple in order to guarantee a better assimilation by the interviewees, but also to save their time. The interviews were manually transcribed from the notes taken during the interview, and were subject to a content analysis with the NVIVO software (version 11.0).

Figure 4 : Research methodology



#### 4. Results and Discussion

The first question on environmental problems highlights the concern of the respondents (27) on this point, arousing feelings of anguish and remorse while blaming man and his activities: "I am afraid like everyone else, but should assume that it is man who has caused these changes." (Interviewer 4). At the top of the list, we find pollution (15) and industry (10) as the main causes, and only two respondents mention the indifference of economic actors.

When asked about the measures taken to deal with these problems, our interviewees believe that the various actions taken are not sufficient: "There are often awareness campaigns, but this is limited in relation to the scale of the problems and it is not enough." (Interviewer 15). As for the direct impact of these problems on the interviewees, the majority think that the impact exists, while some judge that it is not important: "even if these problems worry me, but it does not impact me directly. (Interviewer 6).

When asked about knowledge of green communication, the majority of respondents were unfamiliar with the concept (19). After explaining these principles, we moved on to the question of evocations of the term "green communication", the most widespread concept is "environment" (15), followed by "sustainable development" (10) and finally "corporate social responsibility" (2): "green communication for me evokes a communication that takes into consideration the environment. " (Interviewer 21). On the other hand, 8 out of the 25 respondents find that the color green gives off a negative perception and evaluation of green communication: "I see that all companies today use green in advertising campaigns only to attract the attention of customers and have the label of green company, which is not the case in reality, it is greenwashing" (Interviewer 4), while the rest associate it directly with this communication.

The implementation of a green communication in the oil sector is rather well received (25): "It is a good idea, the concept is interesting." (Interviewer 25); "It is a good initiative to raise awareness of the dangers of this sector." Only 3 respondents find this application unfounded: " it's a marketing buzz nothing more, it's a polluting industry and it won't change by communicating about the environment." (Interviewer 1).

Even more, all (27) of our respondents prefer to patronize gas stations of companies that use this communication. Regarding the causes that push them to frequent these gas stations, the originality of the concept (6) appears, and the majority think they are doing a good deed towards the environment (21): "For me it's a simple way to show my environmental commitment and to participate in the preservation of the environment. (Interviewer 7); "These are committed companies and we should encourage them. (Interviewer 19).

In addition, two trends emerged regarding the benefit of this communication for the consumer: Adhering to the safeguarding of the environment (4) and the change of attitude positively towards the company and the communication actions of the company (23). Furthermore, when asked "does this communication change your perception of the oil sector?", the majority (25) declare that this communication positively impacts their perception of the oil sector, while two respondents do not pay attention to it: " A company

that makes a green communication is surely a company that takes the environment into consideration so I will judge the sector positively. (Interviewer 11).

In view of our results, it turned out that the interviewees are aware of the major challenge of the environmental issue and show a willingness to adhere to this form of communication because they see it as a commitment of the oil sector to improve environmental protection and a way to raise awareness of the importance of ecology. Some also see it as an interesting concept and a simple way to join this cause by frequenting the gas stations concerned. The concept of environmental concern aligns perfectly with the findings of our literature review. For Sen, Bhattacharya and Korschun (2006) environmentally concerned consumers adhere to the values and commitment conveyed by the company.

Moreover, our respondents emphasize that the credibility of green communication impacts their perception of the company, which is corroborated by Parguel and Benoit-Moreau (2015) and Parguel et al. (2011). These authors argue that green communication actions have a positive impact on consumers' perception. Even more, the use of the green color is often associated with green communication. For Benoit Moreau et al., 2008; David and Lambotte, 2011; Munshi and Kurian, 2015, using green in an add is perceived as a representation of the committed environmental side of the company.

However, association "green color-communication" may reveal a consumer's manipulation in the form of greenwashing. This misleading perception could influence the attitude towards the content that allows the communication to be perceived responsibly (Chauveau et Rosé, 2003; Bernard, 2008), but also the attitude towards the company.

## 5. Conclusion

Green communication in controversial sectors has always been pointed out as a strong tool that advertise greenwashing. Despite this, our study allowed us to point the fact that this communication could be one of the strong axes of differentiation for the company by positioning it as committed and innovative. Thus, it must be included in the green communication strategy, especially in terms of its influence on the brand image. However, one must be careful about the association of ecology with the oil sector. The term "greenwashing" that creates distrust towards this communication (Matthes & Wonneberger, 2014). One of the reasons for consumer confusion is the detection of greenwashing because consumers find it difficult to perceive the difference between communication that meets environmental sustainability requirements and communication that does not because of false and hidden information (Paixão, 2016).

Also, and contrary to what one might argue, environmental concern does not imply an instinctive detection of greenwashing (Dembkowski & Hanmer-Lloyd, 1994, cited by Aubourg & Le Hagarat-Pitois, 2004). Indeed, people who tend to be concerned about the environment are not always those who detect greenwashing. Indeed, a latent cognitive dissonance between the consumer's ecological convictions and his perception of this communication occurs if greenwashing is detected. Consumers seemed to be influenced by environmental claims that they could not trust. This finding corroborates the research of Parguel and Al

(2015), Atkinson and Kim (2014), and Spack et Al (2012), who demonstrated that consumers are affected by green signals, regardless of their quality or justification. For convenience, the study took place in the city of Marrakech, taking care to target gas stations in the main neighborhoods of the city in order to ensure different consumer profiles in our sample. The qualitative nature of our study does not allow us to generalize our results, however a quantitative study extended on the Moroccan territory could bring a better lighting.

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**APPENDIX**

Interview Guide

**Filter question:** How sensitive are you to environmental issues?

Relaunch: Does it affect you directly?

**Part 1: About the environment**

Question 1: What do you think about the climate changes that the world has been experiencing in recent years?

recent years?

Question 2: Can you name the main causes of these changes?

Question 3: What do you think about the measures taken to face this cause in Morocco?

Question 4: Do you think you have responsibilities towards the environment?

**Part 2: Green Communication**

Question 5: Are you familiar with green communication? Can you define it in a few words?

Question 6: What does it mean to you?

Question 7: What do you think about the idea of green communication in the oil and gas retail sector?

sector?

Relaunch: How is that? To what extent?

Question 8: Does green communication motivate you to patronize gas stations?

Rerun: To what extent?

Question 9: Why would you patronize gas stations that have adopted green communication?

Question 10: In your opinion, what is the difference between traditional communication and green communication?

Relaunch: Which one do you prefer? And why? In your opinion, what does green communication bring to the company? And to you as a consumer?

**Part 3: Sentences to complete**

Communication is a means that,,,,,,,,,,,,,,,,,,,,,,,,,,,,, ecology

You find this new communication in the oil sector: ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

To combine ecology and oil is: ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

To post its ecological arguments is a means of ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, for the companies oil companies.

## The Roles of Human Resources Managers: The Perceptions of Different Organizational Actors

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### Abstract

Supported by the literature on the role of Human Resources (HR) managers, this study analyses different organizational actors' perceptions of the role and expectations of roles of Human Resources Management (HRM) and HR managers as perceived by different organizational actors. It aims to better understanding the type, nature and denomination of roles, different organizational actors of diverse hierarchical and functional levels attribute to the HR managers. In this study, 257 interviews were conducted with organizational actors, and Grounded Theory was applied to analyze the data. The interviewees were employed at 10 companies (3 multinational and 7 Portuguese companies) and held different hierarchical positions: top managers, peers of HR managers, and collaborators from different organizational functions. This study contributes to literature on the role of HRM and HR managers by highlighting different dimensions as perceived by a multiplicity of organizational actors. Accordingly, for a better understanding of the role and expectations of roles of HRM and HR managers it is important to consider within organizations: the evolution and function of the concept of role; the nature of the influencing factors of role perception; the role designations, and the perceptions between assigned and expected roles.

### Keywords

HRM, HR managers role, Grounded Theory

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## **Application of a Fatigue Cracking Model to Predict Service Life in the Life Cycle Cost Analysis of Asphalt Base Layers Containing Various Rates of Reclaimed Asphalt Pavement**

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### **Abstract**

The road industry is confronted with the search for new materials and means to lower their economic impact as well as better/more accurate evaluation methods. Life cycle cost analysis (LCCA) has been of great interest as it is a useful tool in assisting road agencies to make better investment decisions. Furthermore, using reclaimed asphalt pavement (RAP) has shown to be a viable option to reduce virgin material use and to lessen the economic impact of the asphalt industry. However, literature shows that previous research often does not adjust service life (SL) in LCCA calculations when considering different design alternatives (e.g., varying RAP content), even though mechanical tests clearly exhibit a difference in performance.

The main objective of this study consists of two parts: 1) to evaluate the effect of multiple RAP contents on the SL of asphalt base layers, and 2) to compare the LCCA of asphalt base layers when using a fixed or variable SL. Five AC14 asphalt base alternatives with varying recycling rates (0%, 20%, 40%, 60%, and 80% RAP) were designed. The predicted SLs increased with increasing RAP content and varied between 21 years and 27 years, while the reference SL for an asphalt base layer is typically considered as 20 years. After implementing this adjusted SL in an LCCA, it was concluded that a fixed SL of 20 years overestimated the net present value (NPV) by 3% to 18%. Furthermore, the total NPV decreased by 13% to 53% when using 20% to 80% RAP, respectively.

**Keywords**

Life cycle cost analysis, mechanistic empirical pavement design, reclaimed asphalt pavement, service life prediction, fatigue cracking model

## 1. Introduction

Applying sustainability principles to industries is becoming more and more important. The asphalt pavement sector is also confronted with lowering its impact to increase the overall sustainability of the industry. Sustainability is often linked to the triple bottom line, which involves balancing economic, environmental and social aspects (Babashamsi, Md Yusoff, Ceylan, Md Nor & Jenatabadi, 2016). Because of the long service life (SL) of roads, decision makers are forced to implement long horizon evaluation methods in road management (Heidari, Heravi & Esmaeeli, 2020). When considering the economic pillar, pavement managers should focus on long-term costs covering the entire pavement life cycle rather than limiting to short-term production and construction costs (Babashamsi et al., 2016). Life cycle cost analysis (LCCA) has been of great interest as it is a useful tool in assisting road agencies to make better investment decisions (Ferreira & Santos, 2013). However, the practical implementation of LCCA in road engineering is observed to be very low (Alaloul, Altaf, Musarat, Javed & Mosavi, 2021).

In addition to the use of scientifically-sound analysis methods, the sector also seeks to reduce their impact by introducing changes in material use. Reclaimed asphalt pavement (RAP) is often used as a recycled material to lower the economic and environmental impact of asphalt mixtures. However, asphalt pavements experience ageing throughout the use phase, which results in a loss in the rheological properties of the binder and causes RAP binder to be stiffer and more brittle than virgin binder. Stiffer asphalt materials are normally more prone to cracking (Ling, Luo, Chen, Gu & Lytton, 2020). However, they may provide better fatigue and rutting resistance depending on mixture properties, pavement geometry and loading conditions (Babadopulos, Soares, Ferreira & do Nascimento, 2018). A major concern in pavement engineering is that the SL of pavements is often shorter than initially expected, which increases the global cost (Hernando & del Val, 2013). As the SL has a great impact on LCCA calculations, it is important to better understand the effect of RAP on the SL of asphalt pavements. An option to gather information on the effect on SL and lower budget needs is to use a pavement management system (PMS). A PMS can help optimize maintenance intervals, maximize pavement function and utility, and extend the pavement SL (Babashamsi et al., 2016). Even though a PMS is useful for predicting maintenance intervals after construction, this may come at a too late stage. Since information is collected during the use phase, it is no longer possible to consider other design alternatives to lower the economic (and environmental) impact of the structure.

To have the largest benefits, sustainability principles should always be considered during the planning and design phase of a project (Babashamsi et al., 2016). Hence, methods to predict SL in an earlier phase are needed. Mechanistic-empirical (ME) design methods can be of great interest for this. First, ME models use engineering mechanics to determine pavement response under traffic loading. Afterwards, based on the calculated mechanical responses, they use distress models to predict SL (Zhao & Wang, 2021). As they often only require layer thicknesses, material properties, and traffic loading, which are available before pavement construction, ME models can be easily implemented in the design phase. In order to accurately predict the SL of pavements based on ME design principles, choosing a correct distress model is crucial. This often presents the greatest challenge for pavement researchers and design engineers (Elnashar, Bhat & Sedaghati, 2019). Asphalt pavements experience plastic

deformation and fatigue cracking after repeated traffic loading. This results in fatigue damage, which affects both durability and safety (Li, Jiang, Lin & Yan, 2020). Therefore, fatigue life is often considered to be the primary distress dictating the SL of asphalt pavements (Bańkowski, 2018).

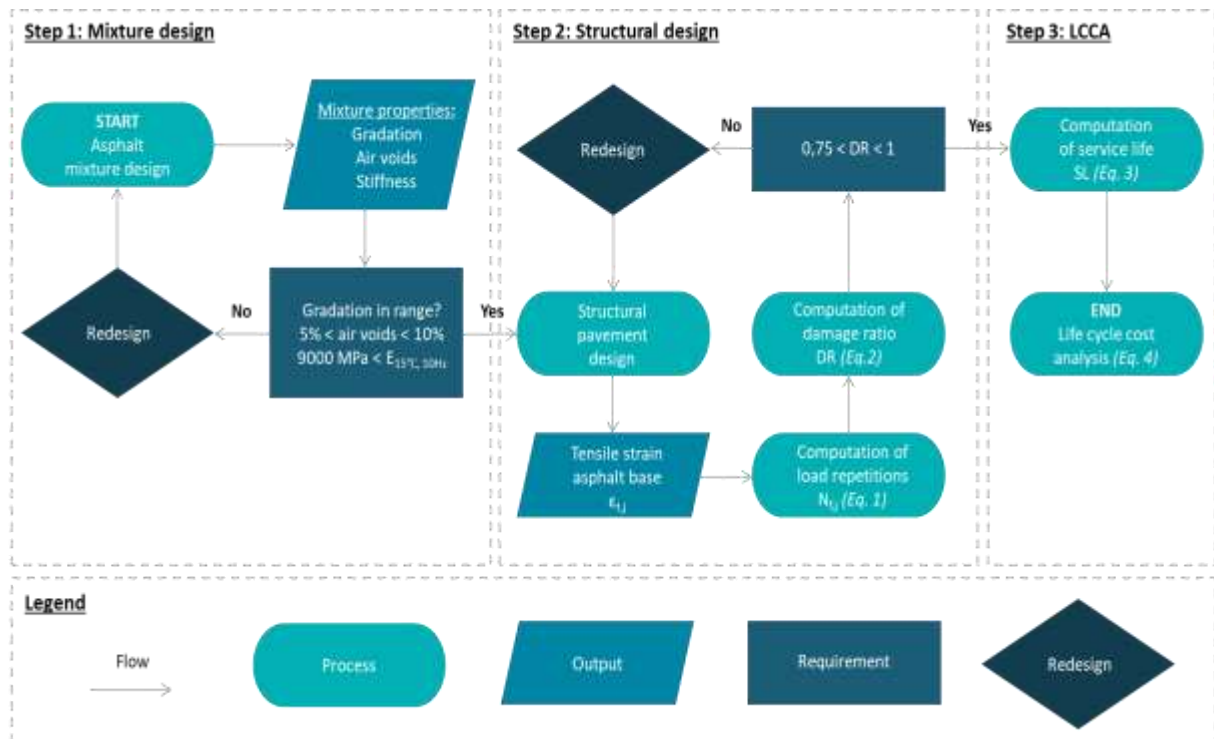
The following objectives are considered within this study, where five asphalt base alternatives of the type AC 14 base will be analyzed containing incremental recycling rates of 20%, starting at no recycling and ending at 80% RAP:

- To evaluate the effect of multiple RAP contents on the SL of asphalt base layers using ME pavement design.
- To compare the life cycle cost (LCC) of asphalt base layers containing various RAP rates considering a fixed SL versus a variable SL using the net present value (NPV) as an economic indicator.
- To identify the economic hotspots within an asphalt base layer's life cycle by splitting the overall LCC into more detailed materials/processes costs.

## 2. Materials and Methods

The research methodology is presented in Figure 1 and consists of three main steps. First, five AC 14 base asphalt mixture alternatives were designed with recycling rates varying between 0% RAP and 80% RAP. These mixtures had to meet the specifications provided by the Flemish road agency. Second, the obtained mixture properties were implemented in the mechanistic empirical design of five asphalt pavement structures, where the asphalt base mixture was considered as a variable. Using multilayer linear elastic analysis (MLEA) software and a distress model, a damage ratio (DR, ratio of applied load repetitions to allowable number of load repetitions) was determined. DR should lie between 0.75 and 1; otherwise, the pavement structure needs to be redesigned. If DR is smaller than 0.75, the structure is overdesigned, which is not interesting from a sustainable point of view as the environmental and economic impact of the structure increases due to the excessive use of materials. If DR is greater than 1, the structure cannot withstand the expected number of equivalent standard axle load (ESAL) applications and will fail prematurely. Finally, DR was used to adjust a reference service life (RSL) to be used as an input for the LCCA of the five design alternatives. A detailed discussion of these three steps can be found in the following sections.

Figure 1: Flowchart of research methodology where the requirements of the mixture design are based on the requirements for an AC 14 base (#ESALs over 20 years > 4 million) of the Flemish road standard

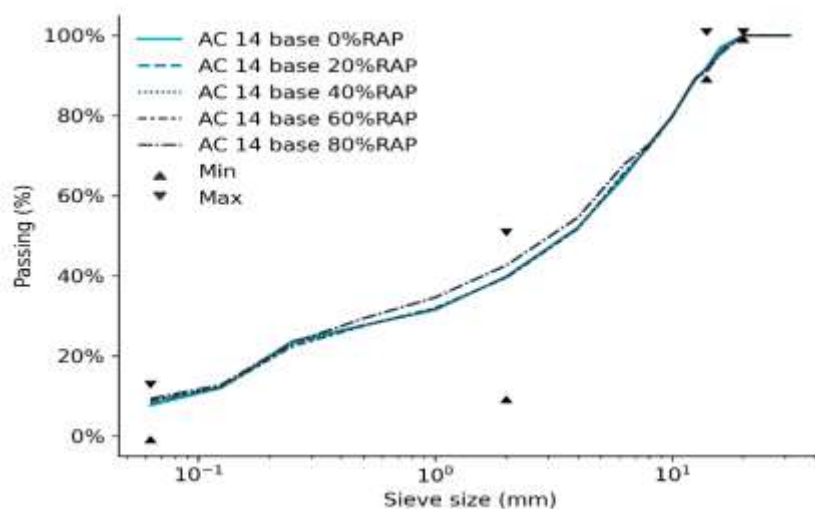


Source: Agentschap wegen en verkeer (2019)

## 2.1. Mixture design

Different asphalt mixture alternatives were designed using the Belgian software PradoWeb (Program for Road Asphalt Design and Optimization – Web). The goal was to design five dense-graded base mixtures using incremental recycling rates of 20% from 0% up to 80% RAP. All mixtures had a maximum aggregate size of 14 mm. B50/70 was used as a virgin binder; thus, there was no binder compensation. Eighty percent RAP was the maximum recycling rate because 70% to 80% recycling often corresponds to the technical limit for asphalt production.

Figure 2: Mixture gradation combined with requirements



To solely evaluate the influence of recycling rate, no material types were changed and the same aggregate gradation was targeted for all mixtures, as presented in Figure 2 and Table. Furthermore, the total binder content, consisting of the old RAP binder and the virgin binder, was kept constant at 5% by mass of the asphalt mixture. After designing the mixtures, PradoWeb provided information regarding gradation, percentage of air voids, and mixture stiffness. This information was used to verify that the designed mixtures met the specifications set by the Flemish Road Agency (Agentschap wegen en verkeer, 2019).

Table 1: Mixture composition with corresponding properties

	AC 14 base 0% RAP	AC 14 base 20% RAP	AC 14 base 40% RAP	AC 14 base 60% RAP	AC 14 base 80% RAP
Crushed coarse [%]	57.83	49.36	40.81	32.17	19.29
Crushed fine [%]	18.11	12.73	7.30	1.82	0.01
Natural fine [%]	12.59	9.39	6.15	2.86	0.01
Filler [%]	6.48	4.87	3.25	1.61	0.01
RAP [%]	/	19.81	39.83	60.06	80.40
New Bitumen 50/70 [%]	5.00	3.84	2.66	1.48	0.29
PEN value [0.1 mm] <sup>1</sup>	55	44	36	29	24
Bulk density [kg/m <sup>3</sup> ]	2259	2260	2260	2259	2258
Air void content [%] <sup>2</sup>	6.90	6.45	6.05	5.69	5.36
E <sub>0°C, 10 Hz</sub> [MPa]	19855	19075	18792	18848	19128
E <sub>15°C, 10 Hz</sub> [MPa] <sup>3</sup>	10118	10154	10459	10950	11566
E <sub>30°C, 10 Hz</sub> [MPa]	2584	3136	3723	4364	5056

<sup>1</sup>This is the PEN value of the blend of the RAP binder and B50/70 binder

<sup>2</sup>The air void content should range between 5% and 10%

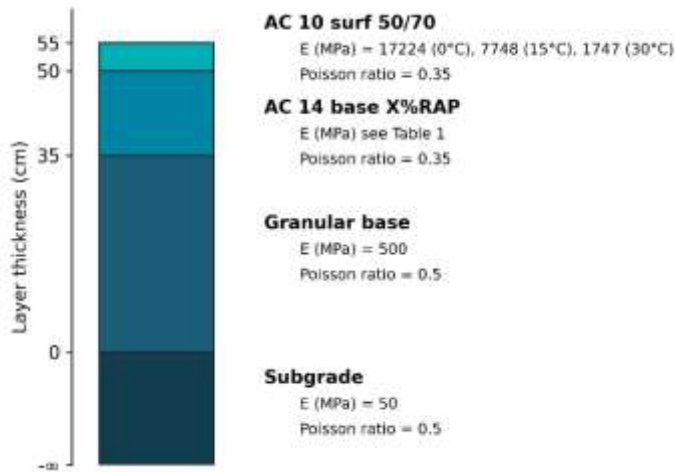
<sup>3</sup>The expected elasticity modulus of the asphalt mixture at 15°C and 10 Hz should be higher than 9000 MPa

## 2.2. Structural pavement design and service life prediction

To determine the influence of changes in RAP content on the SL of asphalt base layers, a structural pavement design was performed. Figure 3 depicts the full structure where only the

asphalt base layer type is considered to be variable. The structure consists of 5 cm of asphalt surface layer, 15 cm of asphalt base layer, and 35 cm of granular base on top of the subgrade. The design traffic was set to 16 million ESALs over a design period of 20 years. This period is often considered to be the RSL of an asphalt base layer (Hernando & del Val, 2013).

Figure 3: Pavement structure



In the past, pavement design was commonly performed using empirical approaches. However, most countries have transitioned towards mechanistic-empirical methods (Orobio & Gil, 2015). The mechanistic part focusses on engineering mechanics to determine pavement responses under traffic loading. Then, empirical distress models are used to predict long-term performance through local calibration using the calculated mechanical responses as an input (Zhao & Wang, 2021).

Several pavement distresses can occur; however, fatigue cracking is often accepted to be one of the main types resulting in structural pavement damage (Zhi, Gun, Hui & Bo, 2012). Most fatigue cracking models consider only the maximum tensile strain at the bottom of the asphalt base layer to calculate the allowable number of load applications. The lower the tensile strain, the more load applications the pavement can withstand. One way to decrease the strain at the bottom of the asphalt layer is to increase the stiffness of the asphalt base layer by, for example, adding RAP or using a stiffer binder. However, stiffer materials tend to be more brittle and thus more likely to crack. This means that using a stiffer material could lead to a reduced number of load cycles.

To account for this effect, the Asphalt Institute's fatigue cracking model (Eq. 1) was employed (Adhikari, Shen & You, 2009; Elnashar et al., 2019; Pellinen, Christensen, Rowe & Sharrock, 2004; Rind, Jhatial, Sandhu, Bhatti & Ahmed, 2019). The tensile strain at the bottom of the asphalt base layer was calculated using the free MLEA software WESLEA. WESLEA requires the following inputs per layer: thickness, elasticity modulus, and Poisson ratio, which are shown in Figure 3. Once the number of allowable load repetitions is calculated from Eq. 1, DR is determined as shown in Eq. 2. Finally, Eq. 3 can be used to adjust the RSL based on the expected mechanical performance provided by DR. Please note that Eq. 1 considers 80 kN ESAL instead of the European 100 kN ESAL.

$$N_{f,j} = 0.0796 \times \left( \frac{1}{\varepsilon_{t,j}} \right)^{3.291} \times \left( \frac{1}{145 E_j} \right)^{0.854} \quad \text{Eq. 1}$$

$$DR = \sum_{j=1}^s \frac{n_j}{N_{f,j}} \quad \text{Eq. 2}$$

$$SL = RSL \times DR^{-1} \quad \text{Eq. 3}$$

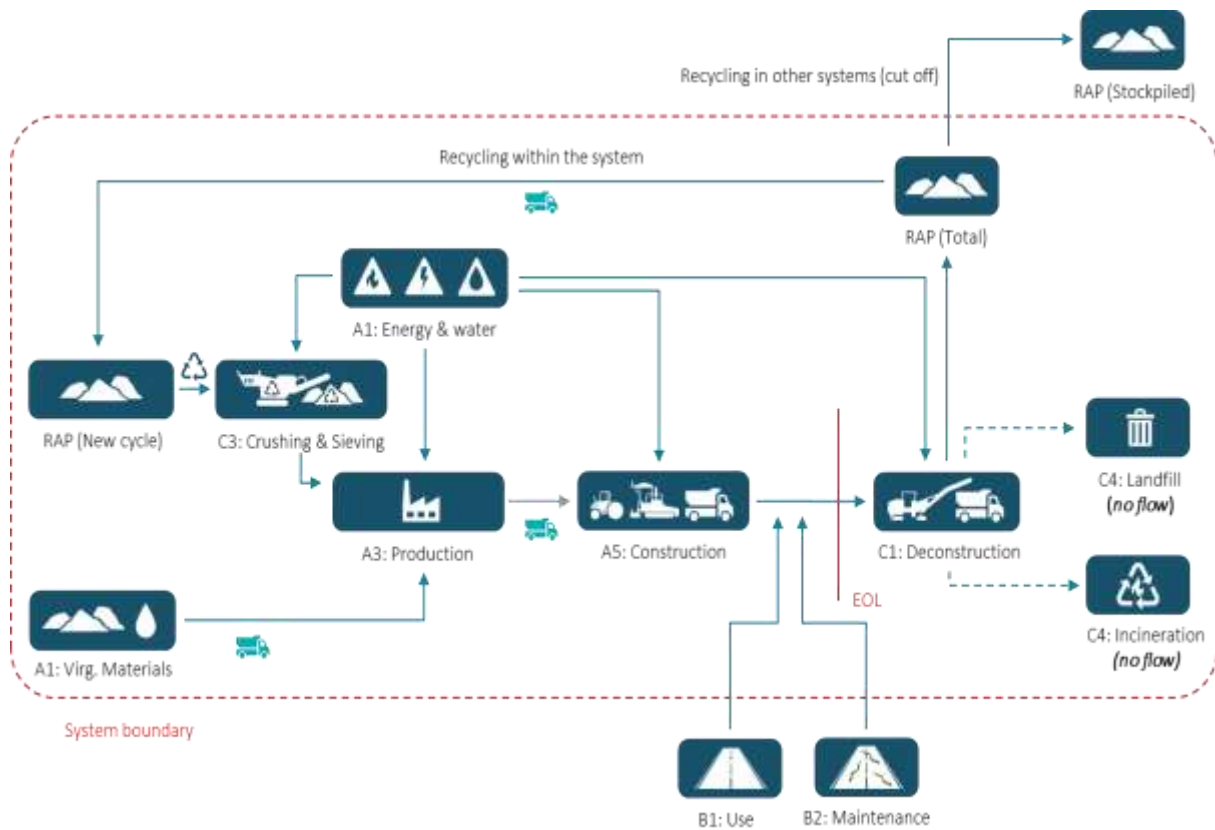
where  $j$  is the season within the year (cool, intermediate, and warm),  $N_{f,j}$  is the number of allowable load repetitions for season  $j$ ;  $\varepsilon_{t,j}$  is the tensile strain at the bottom of the asphalt base layer for season  $j$ ,  $E_j$  is the elasticity modulus of the asphalt base layer for season  $j$ ,  $DR$  is the damage ratio,  $n_j$  is the number of applied load repetitions for season  $j$ ,  $SL$  is the service life of the asphalt base layer, and  $RSL$  is the reference service life for an asphalt base layer (20 years).

### 2.3. Life cycle cost analysis

To determine the effect of various recycling rates on the economic impact of an asphalt base mixture, an LCCA was performed. LCCA can be defined as “a systematic or analytical methodology that uses economic techniques to evaluate the life cycle cost of alternatives by calculating the initial costs and discounting all future costs incurred throughout the lifespan over a predefined period of analysis” (Moins, France, Van den bergh, & Audenaert, 2020, p.2).

The system boundaries for the analysis in this study (Figure 4) were defined using EN15804 (European Committee for Standardization, 2019) and ISO15686-5 (International Organization for Standardization, 2017) as references. This analysis focusses on ‘the recycled content’ of asphalt mixtures, i.e., on reducing the quantity of primary materials. Therefore, waste processing of RAP is considered in the beginning of the system. Furthermore, it is assumed that RAP is 100% recycled after the pavement’s end-of-life (EOL); thus, no flow is allocated to either landfill or incineration. However, only the amount of RAP required for the production of the alternatives is considered within the system boundary. For the remaining RAP, a cut off approach is used. As this research focusses on the cost from the perspective of a road agency, user’s cost falls out of scope. Finally, only full rehabilitation of asphalt base layers was considered; thus, maintenance interventions are also out of the system boundary.

Figure 4: Product system with corresponding system boundaries based on EN15804



All five base layers were compared in terms of the following functional unit: “1 m<sup>2</sup> of asphalt base layer that meets Flemish specifications regarding mixture and structural design for an asphalt pavement that have to withstand 16 million ESALs over a design period of 20 years”. Other important periods are the analysis period and SL of the alternatives. As mentioned before, the design period of 20 years corresponds to the RSL of an asphalt base layer. However, to determine the actual SL of the alternatives, the RSL was adjusted using DR. With regards to the analysis period, it is important that at least one full rehabilitation is considered (Moins et al., 2020). As the SL of the alternative with the highest predicted mechanical performance will outlast 20 years, an analysis period of 40 years was chosen.

A combination of primary and secondary data was utilised for the life cycle inventory of the analysis. Secondary data were used for the cost of natural gas (Eurostat, 2019b), electricity (Eurostat, 2019a), tap water (Vlaamse Milieumaatschappij, 2021), diesel (STATBEL, 2019), and emission trading (European Energy Exchange, 2019). For all other processes and materials, primary data collected from material suppliers and asphalt contractors were used. Detailed information can be found in Table 2.

Table 2: Overview material/process unit prices

Life cycle phase	Cost component	Unit cost
<b>Virgin materials (A1)</b>	Crushed coarse aggregate <sup>1</sup>	25.60 €/t
	Crushed fine aggregate <sup>1</sup>	13.04 €/t
	Natural fine aggregate <sup>1</sup>	16.95 €/t
	Bitumen B50/70 <sup>1</sup>	349.72 €/t
	Filler <sup>1</sup>	16.98 €/t
	Natural gas	0.02 €/kWh
	Electricity	0.12 €/kWh
	Tap water	4.45 €/m <sup>3</sup>
	Diesel	1.10 €/l
	Tack emulsion	0.15 €/m <sup>2</sup>
<b>Transport (A2, A4 &amp; C2)</b>	Truck <sup>2</sup>	0.07 €/t.km
<b>Waste processing (C3)</b>	Quality fees	0.25 €/t
	Labour	0.80 €/t
	Equipment (2 front loaders and crusher)	5.67 €/t
<b>Asphalt production (A3)</b>	Quality fees	0.25 €/t
	Labour	0.95 €/t
	Plant operation	9.26 €/t
	Equipment (front loader)	1.54 €/t
	Emission trading <sup>3</sup>	24.37 €/t.CO <sub>2</sub>
	Energy	Variable
<b>Pavement construction (A4)</b>	Labour	0.37 €/m <sup>2</sup>
	Equipment (2x rollers, paver and tack sprayer)	0.28 €/m <sup>2</sup>
<b>Pavement deconstruction (C1)</b>	Labour	0.04 €/m <sup>2</sup>
	Equipment (milling machine and sweeper)	0.45 €/m <sup>2</sup>

<sup>1</sup>Excluding transport to the asphalt plant

<sup>2</sup>Transport distance: 128 km for crushed materials, 95 km for natural aggregate, 124 km for filler, 61 km for bitumen and emulsion, 43 km for RAP (from site to the plant) and for asphalt mix (from plant to the site) (Anthonissen, 2017).

<sup>3</sup>A conversion factor of 0.2 kg CO<sub>2</sub> per kWh of natural gas is considered to determine the emission trading cost.

The energy cost during asphalt production, together with the emission trading cost, is variable per alternative and was calculated separately. Other fuel (and water) costs, for example during construction and deconstruction, were already considered within the equipment costs together with the renting cost because no effect of different recycling rates is expected. Previous research showed a linear relationship between the natural gas consumption during asphalt production and the RAP content in the mix (Anthonissen, 2017). Primary data regarding natural gas consumption for an AC mix without and with 70% RAP were collected at an asphalt plant: 70.69 kWh/t and 75.32 kWh/t, respectively. Hence, the natural gas consumption in kWh/t for a given recycling rate can be calculated using Eq. 4. Additionally, a fixed electricity consumption of 6.12 kWh/t was considered during asphalt production.

$$EC = 70.69 + \frac{75.32 - 70.69}{70\%} \times \%RAP \quad \text{Eq. 4}$$

The NPV was used as the economic indicator, as it can express agency's cost over the entire life cycle using a single value, which makes comparing design alternatives straightforward. Furthermore, it considers the value of time by discounting all future costs. For this research, a discount rate of 4% was used. The NPV is calculated using Eq. 5:

$$NPV = \sum_{n=0}^{AnP} \left( \frac{C_{VM} + C_{T,VM} + C_{T,RAP} + C_{WP} + C_{AP} + C_{T,site} + C_C + C_{DC} - RV}{(1 + d)^n} \right) \quad Eq. 5$$

where  $NPV$  is the net present value in €/m<sup>2</sup>,  $AnP$  is the analysis period (40 years),  $n$  is the year of cost occurrence,  $C_{VM}$  is the virgin material cost in €/m<sup>2</sup>,  $C_{T,VM}$  is the virgin material transport cost in €/m<sup>2</sup>,  $C_{T,RAP}$  is the RAP transport cost in €/m<sup>2</sup>,  $C_{WP}$  is the RAP waste processing cost in €/m<sup>2</sup>,  $C_{AP}$  is the asphalt production cost in €/m<sup>2</sup>,  $C_{T,site}$  is the asphalt mix transport cost in €/m<sup>2</sup>,  $C_C$  is the pavement construction cost in €/m<sup>2</sup>,  $C_{DC}$  is the pavement deconstruction cost in €/m<sup>2</sup>,  $d$  is the discount rate of 4%, and  $RV$  is the residual value in €/m<sup>2</sup>

### 3. Results and Discussion

Table 3 summarizes the results from the mechanistic empirical pavement design. All DRs fall within the specified range of 0.75 to 1, which means that an asphalt base with a fixed thickness of 15 cm is sufficient from a structural point of view. After adjusting the RSL (20 years) based on the DR results, the SL ranged between 21 years and 27 years. This means that SL would be underestimated by 5% to 35% if RSL was used in the LCCA without considering the structural performance of the pavement section. Of note, the expected SL was found to increase with increasing recycling rate in this study.

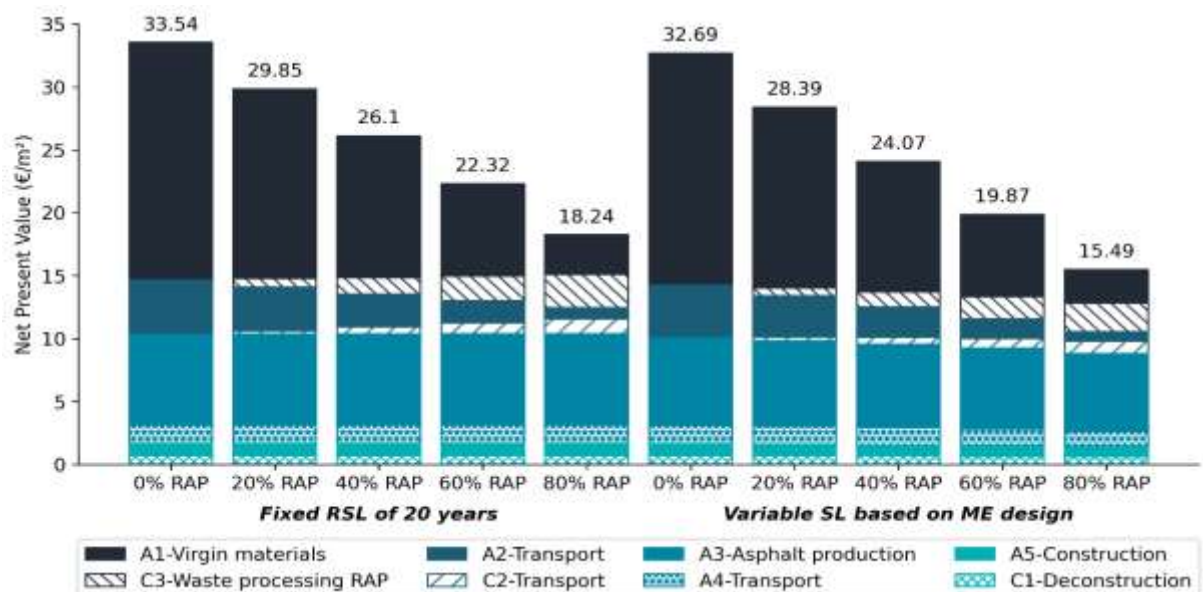
Contradictory results are found when comparing these findings with the findings in the literature regarding the tested fatigue life of mixtures containing RAP. Predicted fatigue performance and field observations show that RAP mixtures can perform better or worse than virgin asphalt mixtures depending on whether RAP was correctly accounted for in the mixture and structural design (Wang, Keshavarzi, & Kim, 2018). Generally, literature indicates that recycling rates of up to 40% RAP are beneficial for the fatigue life of asphalt mixtures. When the recycling rate is further increased without any binder compensation, the tested fatigue life in the laboratory decreased (Margaritis, Jacobs, Pipintakos, Blom, & Van den bergh, 2020). When additives, such as rejuvenators, are added to high recycling rates, some authors even reported that mixtures with 100% RAP exhibited better fatigue performance than the reference mixture without recycling (Zaumanis et al., 2019).

Table 3: Results of service life prediction using mechanistic-empirical pavement design with Asphalt Institute’s fatigue cracking model

Parameter	AC 14 base 0% RAP	AC 14 base 20% RAP	AC 14 base 40% RAP	AC 14 base 60% RAP	AC 14 base 80% RAP
$E_t, 0^\circ\text{C}, \text{AC bottom } [\mu\text{E}]$	-40.90	-41.87	-42.24	-42.17	-41.80
$N_{f,0^\circ\text{C}} [10^6]$	67.07	64.25	63.22	63.41	64.46
$n_{0^\circ\text{C}} [10^6]$	4	4	4	4	4
$DR_{0^\circ\text{C}}$	0.06	0.06	0.06	0.06	0.06
$E_t, 15^\circ\text{C}, \text{AC bottom } [\mu\text{E}]$	-65.44	-65.32	-64.29	-62.72	-60.08
$N_{f,15^\circ\text{C}} [10^6]$	25.40	25.48	26.17	27.30	30.02
$n_{15^\circ\text{C}} [10^6]$	8	8	8	8	8
$DR_{15^\circ\text{C}}$	0.31	0.31	0.31	0.29	0.27
$E_t, 30^\circ\text{C}, \text{AC bottom } [\mu\text{E}]$	-138.46	-128.52	-119.83	-111.94	-104.8
$N_{f,30^\circ\text{C}} [10^6]$	6.92	7.49	8.15	8.90	9.75
$n_{30^\circ\text{C}} [10^6]$	4	4	4	4	4
$DR_{30^\circ\text{C}}$	0.58	0.53	0.50	0.45	0.41
DR	0.95	0.91	0.86	0.81	0.75
SL	21	22	23	25	27

Figure 5 presents the results of the LCCA for all five alternatives considering a fixed RSL of 20 years (left) and an adjusted SL based on ME pavement design (right). For a fixed RSL of 20 years, the NPV of the alternatives varied between 33.54 €/m<sup>2</sup> and 18.24 €/m<sup>2</sup>. Adding 20% RAP to the AC 14 base 50/70 mixture lessened NPV by 11%. Using 40% RAP and 60% RAP provided savings of 22% and 33% compared to no recycling, respectively. Lastly, a recycling rate of 80% RAP yielded overall savings of 46% compared to no recycling.

Figure 5: NPV results for AC 14 base mixtures with recycling rates up to 80%; left group = NPV when a fixed RSL of 20 years is used; right group = NPV when a variable SL based on ME design is used



However, the consideration of an adjusted SL caused an additional reduction in NPV of 0.85 €/m<sup>2</sup> to 2.75 €/m<sup>2</sup> when compared to the fixed SL approach. In other words, the use of a fixed RSL of 20 years overestimated the NPV by 3% to 18%. The results with an adjusted SL showed greater savings associated with recycling. Recycling 20% RAP decreased the NPV by 13%; when recycling 40% RAP and 60% RAP, savings of 26% and 39% are expected, respectively. Finally, the highest economic benefits are linked to recycling 80% RAP; the NPV in this case dropped by 53% compared to no recycling.

To identify the economic hotspots within the pavement life cycle, the total NPV was broken up into individual life cycle phases. When analyzing the results for a fixed SL, no difference in impacts is expected for the transportation phase of the asphalt mix to the site (A4), the construction phase (A5), and the deconstruction phase (C1). However, when SL is adjusted, the impact of all three phases reduced by 2% to 13% when using 20% to 80% RAP, respectively. Regarding the raw material and raw material transport phase, the individual impacts linked to RAP and virgin materials are considered together. For a fixed SL, the impact of raw materials decreased from 17% for 20% RAP to 69% for 80% RAP. Likewise, the impact of material transport reduced from 13% to 52% for 20% and 80% RAP, respectively. For an adjusted SL, these ranges increased to 19% to 73% and 15% to 58%, respectively.

Contradictory results are found for the asphalt production phase. With a fixed SL, a negligible increase of 1% in production impact was observed when recycling. However, reductions of 2% to 12% were obtained when using 20% to 80% RAP and adjusting SL. Overall, 71% to 78% of the total NPV is allocated to only materials (A1-Virgin materials and C3-Waste processing RAP) and asphalt production. For all design alternatives, except for the alternative with 80% RAP, the sum of the impact of virgin materials and RAP is the main hotspot, with a contribution ranging from 42% to 56%. The impact of asphalt production for these alternatives varied between 21% and 32%. However, in the case of 80% RAP the production phase was the main economic hotspot with a share of 40%; materials had a contribution of 32% in the NPV.

These findings are supported by other studies in the literature. Savings of 20% are reported when adding 40% RAP in new asphalt mixtures (Qiao et al., 2019). Furthermore, the main economic benefit of using RAP is linked to lowering the raw material impact. When 20% to 50% RAP is recycled, material cost savings of 15% to 40% were reported (Coleri, Zhang & Wruck, 2018; Kaseer, Martin, & Arámbula-Mercado, 2019). If rejuvenators are added as part of the recycling process, using 100% RAP can reduce the material impact by 91% (Martins Zaumanis, Mallick & Frank, 2014).

#### **4. Conclusion and Research Opportunities**

Literature showed that previous research often does not adjust SL in LCCA calculations when considering multiple design alternatives even though mechanical tests clearly exhibit a difference in performance. The use of ME design approaches, e.g. combining MLEA software and distress models, showed to be of great interest for predicting SL when only limited information is available during the design phase of asphalt pavements. ME design using the WESLEA software and the Asphalt Institute's fatigue cracking model was applied in this study to predict the SL of an AC 14 base mixture containing various recycling rates without binder

compensation. This information was later implemented in an LCCA to analyse the effect of varying SL and increasing recycling rates. The following conclusions and findings were drawn:

- The adjusted SL increased with increasing recycling rate and varied between 21 years and 27 years, while the RSL of an asphalt base layer is only considered to be 20 years.
- Using the RSL instead of the adjusted SL underestimated the SL by 5% to 35%.
- Considering the RSL of 20 years, the NPV of the reference mixture decreased by 11% to 46% when using 20% to 80% RAP, respectively.
- Considering the adjusted SL, the NPV of the reference mixture decreased by 13% to 53% when recycling increased from 20% to 80% RAP, respectively.
- Using a fixed SL of 20 years overestimated the NPV by 3% to 18% compared to using the adjusted SL.
- Adjusting the SL resulted in reductions of 2% to 13% in the economic impact of the transportation phase of the asphalt mix to the site (A4), construction phase (A5), and deconstruction phase (C1) when using 20% to 80% RAP, respectively. Conversely, no difference in impact is found for a fixed SL.
- A negligible increase of 1% in production impact was observed when using recycling and a fixed SL of 20 years due to an increase in energy use. However, reductions of 2% to 12% were obtained for 20% to 80% RAP, respectively, when considering an adjusted SL.
- Recycling provided the largest benefits within the raw material and raw material transport phase. Considering a fixed SL, the impact of material and material transport decreased by 17% to 69% and 13% to 52%, when 20% to 80% RAP is used, respectively. For an adjusted SL, these ranges increased to 19% to 73% and 15% to 58%, respectively.
- Finally, 71% to 78% of the total NPV is allocated to only materials (A1-Virgin materials and C3-Waste processing RAP) and asphalt production.

The Asphalt Institute's distress model is often employed for predicting SL in the literature because it is a simple and straightforward approach. According to literature, increasing the recycling rate over 40% RAP without any binder compensation may have a negative impact on the tested fatigue life. However, even over 40% RAP, the predicted fatigue life increased in this study when increasing the recycling rate using the Asphalt Institute's distress model. To increase accuracy, more sophisticated models can be employed after local calibration has been performed. Fatigue cracking was considered to be the main distress type resulting in pavement failure. However, depending on mixture type and pavement layer, other distress types might have a greater share in the accumulation of damage. Therefore, it is recommended that future research consider additional distress types and models when predicting the SL for the use in LCCA and/or LCA calculations.

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## **Current Strategies in Global Staff Mobility**

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### **Abstract**

The business world is rapidly transforming, and the ways human capital is formed and managed are also changing. On a global scale, the interconnection and interdependence of knowledge, technology and capital is growing. The global market landscape is constantly transforming. In recent years, a gradual, stable shift of economic power from the West to the East is a fundamental trend. Over the next decade, demographic change in line with shifting economic power will further transform the international business landscape. New growth centers will emerge. Western multinationals are already struggling to compete with new dynamic multinationals from emerging economies including Africa and Latin America. The next decade will continue to put them to the test. These social and economic processes contribute to global staff mobility intensification which is expected to grow exponentially by 2020.

### **Keywords**

Human capital, staff mobility, global

## Introduction

A mounting number of studies in global economic science research expatriate workforce. While there are few Russian studies on this topic, foreign studies do not consider the specifics of work of expatriate managers in the Russian economy. As for the history of researching the topic, we should mention a number of studies related to Russia, devoted to methods of Russian managers, their differences from management methods applied in Western countries (Baron, 1999; Roshin, 2000; Erdener, 1996; Gomes, 1999; Hsieh, 1999). Some authors (Ageev, 1991; Prigozhin, 1995; Soros, 1998) wrote about the specifics of Russian national culture and its influence on workers and managers. Others considered the aspects of dealing with Russian business partners (Kelemen, 1999; Peterson, 1996). However, none of the studies went into detail on the matter of expatriate managers in Russia, aspects of their life and work in Russia.

In the early 21<sup>st</sup> century, global economic development is principally marked by economic globalization, growing multinationals and international firms, their market entry in much of the world. Overseas market success for multiple international companies is one of the essential aspects of their work, since profit share from activities outside the country of origin is more and more substantial year after year. As far back as by the mid-1980s, the world practice of international companies operating in overseas markets, included employing foreign managers to work in foreign subsidiaries. Nowadays, recruiting foreign managers for foreign subsidiaries is ever increasing. To achieve high results in overseas markets, companies pay particular attention to selection and work of those managers who are in charge with foreign branches, and their performance is key to success of the entire branch.

## Staff Mobility Effect on Organization Development - New Principles of Staff Management in Modern Multinationals

The main reasons for recruiting foreign managers for foreign subsidiaries of international companies are the following:

- the need to monitor the work of a foreign branch,
- lack of professionals in the local labor market,
- a manager's need to gain international experience.

Factors affecting motivation of staff for global mobility:

### Cross-cultural adaptation

Mobility strategies must be comprehensive, flexible, adaptable and ever-evolving to meet specific business needs, to cope with the growing demands of employee engagement, while managing different wants and expectations of various aged employees. As organizations bring their global mobility programs to closer collaboration with talent management and overall business strategy, new staff mobility "regulations" will inevitably emerge. Mobility will cover a wide range of modes: short-term and long-term; project-based and for a specific employee. Furthermore, virtual mobility will play a key role in developing future leaders and retaining high-value specialists. Companies have to be duly flexible and agile to respond in a timely and effective manner to rapid environment changes, accordingly, boundary-spanning in global staff mobility is now a top priority for them. In this context, boundary-spanning is talent

development in the regions where work is on offer, talent relocation to places where they are on demand, or office relocation closer to human resources and other tactics to ensure business sustainability in view of constantly changing provisions of international migration law. Cultural and linguistic diversity can be a critical deterrent to market development. Today, the objective of employers is to attract and develop employees able to adapt to a new environment.

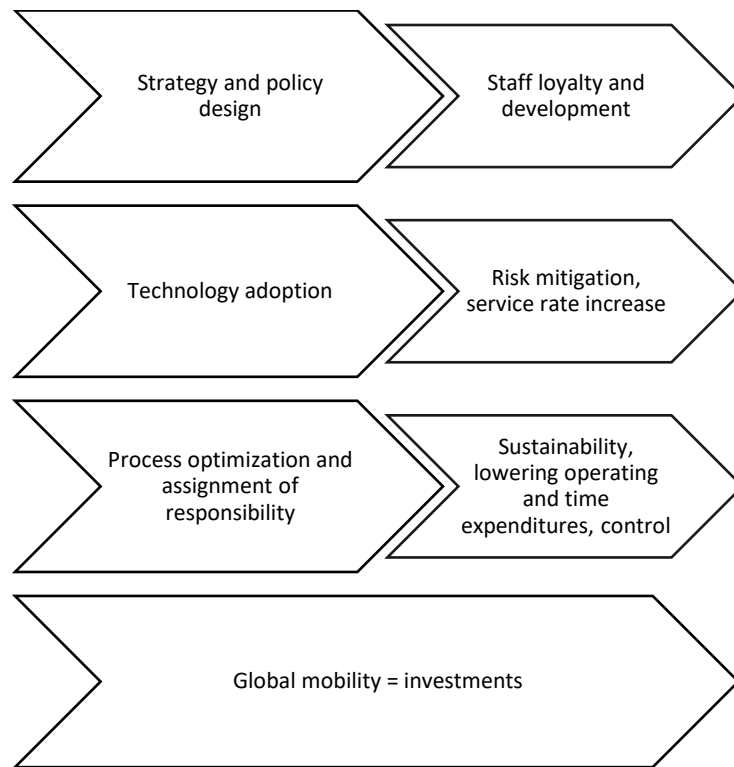
Over time, the borderline between international assignments and business travel is fading. This raises the question whether it still makes sense to divide business travel management from global mobility management. In some organizations, business travel is managed by the business unit, HR uninvolved, that creates an increasing compliance risk. Human capital mobility is turning into a considerable strategic tool. The pressure on HR to support mobility solutions will definitely increase in the future that means developing a proactive approach and technical data management way to supports it.

Applying predictive analysis in HR management is still in germ, but a growing number of organizations are referring to this concept. More sophisticated analysis will allow to identify trends and risks based on the available data Predictive analysis is of considerable current use by other operational divisions such as sales and marketing. Research shows that 95% of organizations refer to HR analytics occasionally, if at all. But this unstructured approach must be changed. As organizations in multiple regions struggle for the demandable staff, business leaders focus on specific workforce groups, personalizing recruitment and retention strategies. All workforce categories, i.e. recent graduates, experienced workers, women, are considered as talent. A universal mobility program cannot work for everyone. Mobility strategies, as well as other talent management matters, should be as flexible as possible, considering specific interests of employees and the ones of business. The retirement market crisis in many countries, for example, shows that the baby boomers will tend to continue working beyond retirement age, and their motivation to accept relocation assignments will be based on financial and timing considerations. The millennial generation, by contrast, is more inclined to short-term and project relocations. Family workers and caretakers for parents can refuse relocation but be involved in virtual mobility.

As talent management is taking roots in business strategy, there is a growing need and request to measure the return on investment in international mobility programs.

International staff mobility cost remains a key issue, as well as the rate of staff retention among returning from abroad professionals. Obviously, there is pressure on the part of stakeholders seeking a positive return on investment and the effectiveness of staff mobility strategies. However, in the longer term, the necessity to develop future professionals as well as provide them with international expertise, is hard to measure.

Figure 1: Potentials for global mobility service optimization

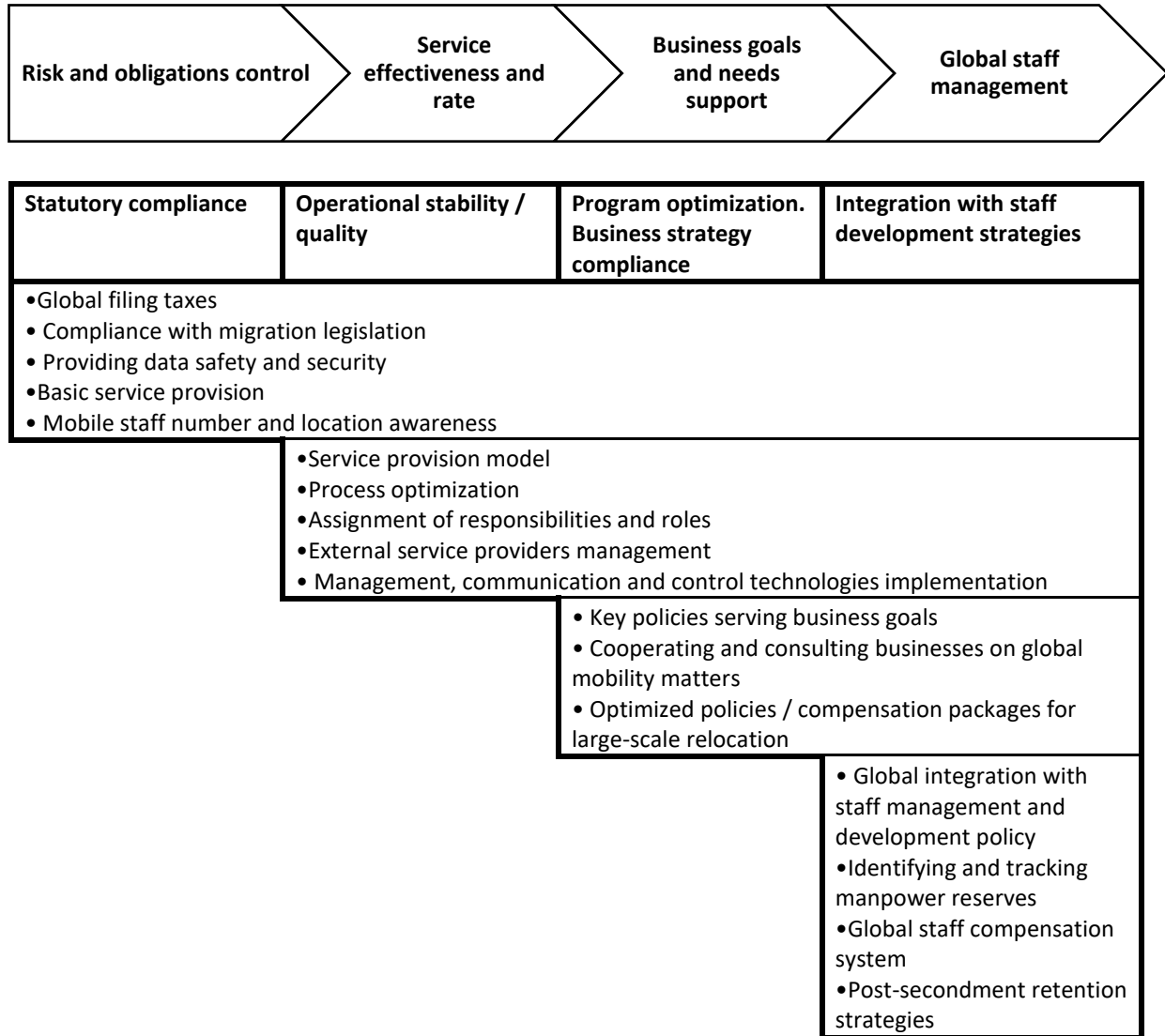


Source: Deloitte & Touche Regional Consulting Services Limited (2013)

As companies today overestimate the importance and role of mobility for business support and for staff development, a mobile workforce management can be a key competitive advantage.

The maturity of staff mobility programs

Figure 2: Staff mobility program maturity stages



Source: Deloitte & Touche Regional Consulting Services Limited (2013)

Staff mobility strategies matrix

Figure 3: Staff mobility strategies matrix

Value to employee development	high	<p><b><u>“Training”</u></b>                      Workers to apply the strategy</p> <ul style="list-style-type: none"> <li>• “Rising stars”</li> <li>• Workers striving for experience and career development</li> </ul> <p>Approach to mobility management</p> <ul style="list-style-type: none"> <li>• “Standard compensation package”</li> <li>• Development orientation</li> <li>• Participants bear a part of expenses on their own</li> </ul>	<p><b><u>“New frontiers”</u></b>                      Workers to apply the strategy</p> <ul style="list-style-type: none"> <li>• Human assets of an organization</li> </ul> <p>Approach to mobility management</p> <ul style="list-style-type: none"> <li>• “Extended compensation package”</li> <li>• Orientation to development, gaining experience, and retention</li> <li>• Enhanced career opportunities</li> </ul>
	low	<p><b><u>“Volunteer”</u></b>                      Workers to apply the strategy</p> <ul style="list-style-type: none"> <li>• Volunteers</li> <li>• Low-paid employees</li> </ul> <p>Approach to mobility management</p> <ul style="list-style-type: none"> <li>• Minimum supplement and support</li> <li>• Relocation within a region</li> <li>• “Risk” secondment</li> </ul>	<p><b><u>“Expert”</u></b>                      Workers to apply the strategy</p> <ul style="list-style-type: none"> <li>• High results</li> <li>• Specific field or skills</li> </ul> <p>Approach to mobility management</p> <ul style="list-style-type: none"> <li>• Short-term secondment or compensation at local level plus assignment allowance (“Local plus”)</li> <li>• Project secondment • Immediate relocation</li> </ul>
		Value to business	low

If employers seek to maximize their investments in global staff mobility, they need to specify their expectations and quality criteria for these programs. Regular feedback, support and mentoring will not only promote spreading international relocation experience, but also reduce the likelihood of quitting by staff mobility participants. Apparently, organizations have to customize their mobility programs to specific workers, and more personalized approach is evolving. Organizations concentrate on staff mobility modes suitable for specific workers, meeting their expectations, and providing the most beneficial experience.

In 2020 and beyond, experts expect growth in B2B, and companies are thinking about infrastructure to provide workers with an acceptable living standards and long-term financial security. Several organizations are already building partnerships with the education sector to provide human resources with necessary skills. A personal and personalized approach to staff mobility will facilitate innovations to improve mobility, service delivery, effective off-site communications and 24-7 support. That is demanded by Millennials. The borderlines between working from office or elsewhere in the world are becoming increasingly blurred.

**Insights**

The business world is in a process of fundamental transformation. The ability of organizations to proactively manage global talent mobility will be the only catalyst for business success. We are in a period when the best and outstanding talents are now pursuing their own career paths

exploiting opportunities available. The East, not the West, is now the most sustainable source of talent. Technology is fundamentally transforming the basic principles. Economic transition and demographic change have already had impact on demand and supply in the brain market. New generation manpower is connected to all-new challenges. Talent management will be a key strategic tool shedding all responsibility to HR professionals.

How do these trends affect a particular organization? Issues to be considered by an organization:

- Have you prepared a staff mobility map to track which skills are needed and where?
- Do you have sufficient and reliable information to identify where you may need changes and / or investments?
- Have you embedded your talent management strategy into the broader business strategy framework?
- Do you have stable intra-organizational communication between departments in charge with staff mobility, talent development, succession management and global resourcing?
- Do key stakeholders and a company's global mobility department have a shared insight about top priorities?
- How are you going to manage Millennials? Can you exploit their mobility to benefit your business?
- What kind of compensation and incentive system is appropriate to meet the needs of different generations in an organization?
- Are an organization's mobility policies and processes proactive or mostly reactive?
- What strategies are provided to retain employees being invested?
- Is an HR department able to cope with emerging challenges?

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## Resources Valuation in a Business Model of High-Growth Enterprises

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### Abstract

Resource based view (RBV) and business models (BM) are well presented and established in the management literature. Both these concepts, although they are separate research areas, are related to building a competitive advantage of the enterprise in the market. The resource-based view, by indicating the characteristics of strategic resources, allows for the creation of an appropriate configuration of the resource base, which is to contribute to ensuring a specific market position. An idea of a business model is to show the way of development of an enterprise and actions at the operational level that will make this activity profitable and ensure growth in the enterprise value. The combination of these two research areas will allow to identify, in the process of building business models, the resources that constitute the strategic potential of the enterprise. The main scientific objective of this paper is to analyze the resources that are the basis for building a business model in high-growth enterprises (HGE). HGEs were selected for the study because their business models are characterized by employment growth and/or sales revenue growth. The empirical research was conducted on a group of 150 Polish high-growth enterprises. HGEs were considered to be those where an increase in revenues from sales or the employment of more than 20% on average annually over the next three years. The paper points out the importance of intangible resources in the process of business model construction.

### Keywords

Resources, business model, high-growth enterprises

## **Building Plan A for Trusting Plan B: Digital Trust as the New Imperative for Surviving the Next Pandemic**

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### **Abstract**

This opinion paper takes a provocative stand: digital trust, defined as calculation rather than an emotion, will be critical to enable our society and economies to function in a post-pandemic world in which our success in crisis management and prevention will be driven by data. Digital trust must emerge from the adaptation of existing rules, building socio-technological resilience, and creating our ability to rely on the information infrastructures of our health care and public information systems. As Covid-19 confirms, future pandemics will rely on the rapid collection and analysis of data to fuel our predictive evaluations and virtually all viral containment and management efforts. However, the current situation also exposes that humankind is inconsistently supporting, and often resisting *en masse*, the contribution of relevant personal data. We propose that digital trust must drive the design of how we prepare for pandemics (“Plan A”) and shape and fuel how we adapt to the unexpected dimensions and variables that define large-scale responses to next pandemics (“Plan B”). Doing so will require conscious commitments to creating and governing our systems and data to enable information velocity, transparency, and continual evaluations of the data's trustworthiness and its sources.

### **Keywords**

COVID-19, digital trust, resilience, reliance, rules

## 1. Reasoning

The recent anniversary of 9/11 refreshes our recollection of a feature of that tragedy that is often overlooked - the resilience of the financial information systems. Many of those systems had resumed operations within hours of the direct physical attacks on their critical systems. In the face of the chaos, something went well; systems were restored, transactions were flowing, and commerce continued to move ahead (Federal Reserve Board, 2002). Why?

In preparation for Y2K and the possibility of systemic chaos, should computers not recognize the new century dates, corporate teams had developed a "Plan B" in case the planning for the date transition failed. These "Plan B" folios presented detailed recovery plans that had been prepared and validated to support the restoration of services with as little disruption as possible. These same plans were relied upon in the hours after the attacks; while the disaster was different, the institutions and recovery teams trusted their Plan B to support their recovery (Chepaitis, 2004).

Facing COVID-19, the inconsistent global responses, and the uneven pace with which the global economy has recovered economic momentum, highlights the importance of having Plan Bs in place—detailed inventories of resources, strategies, funding, and much more—that can be quickly be put into action when the next public health crisis gains momentum. 2020 has exposed and tragically continues to illuminate that a successful implementation of our Plan Bs requires unprecedented trust that these Plan Bs will be effective. There must be trust that the plans can be adapted with confidence—changes in direction are critical to viral containment, but those changes require continued trust<sup>1</sup> - and that those plans will control the threat and minimize illnesses and deaths. When there is a failure to gain that trust, masks are not worn, contacts are not traced, and quarantines are ignored. Vital to our perspective, unless there is trust in the security of the Plan B controls, the personal (and highly sensitive) data required to identify, analyze and respond to infection trends and the effectiveness of prescribed controls will not be reliable (and may not even be made volunteered by either the data subjects or their health providers). Quite simply, the special requirements within Plan Bs for personal information fail in their essential purpose. Without the data, science stumbles, and policy decisions and health strategies within Plan Bs fail to be less informed and more speculative. Daily headlines grimly illustrate how the difficulties in gaining and sustaining trust in the recommendations within Plan Bs continue to undermine current global responses. At the time of publication, both global health and global economics are far from recovery to the new "normal" (World Bank, 2020).

We propose that a fundamental 'root cause' has nothing to do with the features of a particular virus; our challenges and our failures now, and in the future, require examining how we engineer the Plan Bs so that cooperation and trust across all stakeholders—and private individuals—can be achieved, both in the information systems and the digital information assets required to be collected and used within those systems. That *digital trust* must exist from the beginning and must be sustained throughout the duration of future pandemics.

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<sup>1</sup> Widely reported news stories confirm that changes in recommendations on the use of face masks and other protective measures have provoked distrust and non-compliant behavior among many regions. See, e.g., Ellis (2020) or Tufekci (2020).

To be clear, we submit that our information systems' potential utility and responsive and relevant digital information assets in responding to any pandemic hinges upon two very different and often opposing variables. But these variables share a root cause—the degree to which trust has been achieved, and can be sustained, in what those plans require. To counter these adversities when trust is inadequate, a new and essential path forward must be incorporated. It is not too late to integrate our proposal into current efforts to improve our COVID-19 management. Still, perhaps our proposal's greatest value can be realized by planning for the next, inevitable pandemic. What are the two variables?

First, effective pandemic responses require international and even global collaboration that enables information sharing, data collection, analytics, and communication required to support multi-national commitments and coordination. At every technical level across the complexity of our global systems, the implemented steps to be taken to control a pandemic must be trusted. Government and private sector networks, systems, applications, and personnel must establish and sustain trust in the Plan B requirements to enable the required inter-dependent information and knowledge sharing. Of course, this trust must be achieved among all owners, sponsors, and controlling entities responsive to those resources. In its absence, data sharing can be stalled; collaboration struggles to reach effective levels of communication; and measurements of what works, and does not work, are difficult to produce.<sup>2</sup>

Second, individuals must trust that any personal information to be collected about health conditions (such as test results, treatment plans, or long term side effects), and their behavior (such as contact tracing, use of protective masks, and other preventive activities) will be used appropriately for the collective benefit of the larger community and not adversely used to harm the individual's current or future quality of life (whether measured by employment, health care, availability of public services or other resources). The trust of the individuals requires both trust in the corporate and institutional systems (the first variable) (McKnight et al., 2011) and confidence that secondary uses of routine operational data collected in the surveillance of their ordinary lives (e.g., contact tracing via social media geolocation tracking) will be controlled and effectively governed (Dubov and Shoptawb, 2020).

The current pandemic has shown that trust has not been fully achieved at both the systemic and human levels. Some may argue that existing privacy laws and regulations should overcome the lack of trust among individual citizens. We disagree. While, at a global level, those laws and regulations are inconsistent (if they exist at all) and often limited to the boundaries of nation-states or regions, the essential truth is that those rules were crafted to respond to the concerns for protecting personal information collected and used in the ordinary, routine course of operations within commerce and public agencies. Pandemics present extreme threats to our social order, for which the related personal information (and its use) require special rules not reliably in place across current legal systems.

We argue that the challenges of these variables require a new approach. First, long before a pandemic can be identified, there must be what we refer to as a "Plan A". Plan A is the structured, disciplined process employed to engineer the response plans (which are "Plan Bs")

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<sup>2</sup> In the United States, abundant news coverage highlights these inconsistencies, both within the nation's boundaries, as well as across the systems of the nation states (e.g. US and China (Zhong, 2020)).

long *before* the pandemic crisis requires Plan Bs to be launched. This process must be trusted to create trust in Plan Bs. Second, the trust required for Plan Bs to succeed must be established *before* a pandemic arrives. Pursuing the required trust while a virus is spreading is too challenging to accomplish when genuine fear has established itself among the general population. To move forward, we propose that the real objective for both Plan A and Plan B is to achieve *digital trust*.

## 2. What is Digital Trust?

While decades of research have investigated how trust, as an emotion, is established (Benbasat et al., 2010; Komiak and Benbasat, 2006; Lewis and Weigert, 1985), sustained, or degraded into distrust (Dimoka, 2010; Li et al., 2012), we begin with a different perspective. Trust is not an emotion; trust is an affirmative measure of the outcome of intensive, rules-based calculations. Trust is a decision in which the calculations require information to be plugged in, nearly mathematical in the process. In turn, the information that fuels the calculations must be trusted and acquired from trusted sources. Quite simply, everything has to add up within the requirements of our calculations (and the rules embedded within them) for trust to be achieved and sustained (Ritter, 2015).

*Digital trust* emphasizes that our trust decisions regarding networks, systems, devices, applications, and the data within them, require something more. Since so much of technology operates as “black boxes” - complex integrations of hardware, software, and controls not easily understood by anyone other than the engineers and developers - our ability to place trust in these digital assets requires transparency. To determine whether any of these assets are trustworthy, we must insist on understanding—how these assets were designed, the processes of development, and the special rules that were authored and integrated into these assets. Transparency is vital to enabling trust to be effectively calculated; nothing is more important when digital systems and assets are under evaluation. With transparency, the information required to gain confidence and build trust is made available, both in the process and in the resulting systems or solutions.

This is how Plan A becomes vital to making a Plan B, capable of being trusted. A well-designed and well-executed Plan A is built with transparency and awareness that all stakeholders must trust both the process of Plan A and the design and requirements of Plan B. We have now learned why that trust is so essential—our success as a global community requires collecting and using highly personal information at a volume and rate of collecting that is far outside the routine and ordinary data collection occurring in commerce and government operations. If citizens cannot trust the privacy and security of the data required to execute a Plan B successfully, the virus will prevail. Therefore, before the crisis begins, Plan A must express and execute the rules, information assets, and procedures that will help all stakeholders decide to trust Plan B before the pandemic accelerates beyond control affirmatively.

### 3. The Triad of Digital Trust

To gain insight into how Plan A may be successful, we submit that digital trust builds on a triad of three complementary elements: rules, resilience, and reliance. All of these elements and how they are executed must be sufficiently transparent to enable stakeholders to calculate their trust in Plan B and, in turn, the digital operations required to be effective against the viruses to be contained.

As a first step, Plan A must develop the special, necessary rules that enable cross-border research, viral containment, and medical treatment. A pandemic is an extraordinary event, but the general civilian population must be assured that personal information collected within Plan B can be effectively safeguarded against future, secondary uses. Of course, the rules must also be capable of immediate deployment once a pandemic possibility is recognized; governments may require these rules to be formally adopted and approved for use in advance.

But the *rules* for the *process* of developing the pandemic privacy controls are also important. Plan A must offer transparency into that process, so all relevant stakeholders can engage and gain confidence in that process. While controlling a virus will be a priority, the need for transparency will also impose on those creating Plan B to comply with the necessary additional mechanisms and controls (such as audits and enforcement resources). These are required to provide global communities with real-time assurances that the data collected and analyzed is being correctly used.

Implementing and, eventually, trusting these rules to be effective will require *resilience* of infrastructures and systems. Resilience is a long-known concept, initially defined as the capacity of a system to absorb disturbances and reorganize to retain essentially the same function, structure, and feedback (and, therefore, identity) (Gunderson, 2000). Despite the elegance and rigor of the concept, however, this definition captures only a part of reality (Folke et al., 2010). While we can *and should* design our infrastructures, information systems, or technologies to achieve the desired return rate to equilibrium upon a perturbation, so-called engineering resilience (Holling, 1996), human actions are often viewed as external drivers of ecosystem dynamics (Folke et al., 2010). We suggest that when building digital trust, the stakeholders leading Plan A developments must consider both the technological foundation, e.g., infrastructures in which context data are collected and, consequently, rules should be (automatically) executed, as well as the social systems that use, depend and are inextricably linked with it (Folke et al., 2010).

Socio-technological resilience involves understanding people and technological infrastructures/information systems as interdependent systems (Folke et al., 2010). What people need to make Plan A successful in producing reliable Plan Bs is the confidence that contributed personal data will be used for the community's better outcomes without adverse impact on the personal dimensions of their lives. This is not a privacy issue in a commercial or regulatory sense. It is a community-trust decision, i.e., when do we decide to offer our data to benefit the community? While this seems to be a rational decision to be taken by each one of us, even wearing a mask highlights the challenge of all for one and one for all (He and Laurent, 2020).

Consequently, the last aspect of the triad of digital trust is *reliance*. In the presence of appropriate rules and technological resilience, people's reliance on Plan A and Plan B should result; it is the best evidence that digital trust has been achieved (Figure 1).

*Figure 1. Rules, resilience, and reliance: The triad and continual re-evaluation of digital trust*



While these aspects are ingredients to the digital trust calculation, the extent to which people trust information infrastructures (in terms of controlled data use and emergency plan Bs) heavily depends on their ability to trust the descriptive information about those infrastructures and the related rules—how were the rules designed? Who were the authors? What were the methods of adoption? What controls exist to terminate the special uses upon the resolution of the pandemic? All of these questions—and many more—are part of the dialogues to secure digital trust. In effect, each stakeholder has their own respective rules for calculating their trust in both Plan A and Plan B. When they are unable to do so, trust is much harder to achieve. So not merely the plans but their histories (i.e., the provenance of their evolution) must be transparent and accessible for the calculations of trust in their requirements to proceed.

We propose an extension of a principle that also regulates the processing of individual data assets, namely that the velocity of information is proportional to the transparency of its governance (labeled as “the velocity principle”; Ritter, 2015). When provenance cannot be accessed, the negative impact is that the velocity of information moving through complex processes is degraded; achieving trust in the specific information is more laborious and often incapable of being fully calculated.

The same holds true for larger assets such as Plan As and Plan Bs. Knowing their evolution, published and transparent in support of the plans’ content, enables stakeholders to more quickly calculate their trust and, in turn, contribute assets, resources, and data to enable improved containment and controls of the viruses and their impacts. Of course, none of these elements—rules, resilience, and reliance—are singular events; we calculate trust in our complex systems, including pandemic response Plan Bs, continually. New variables or perturbations demand new calculations and re-validation of the suitability of the rules (or necessary modifications), the resilience of the related systems and processes (or necessary modifications), and the strength of the reliance (i.e., calculations of the digital trust therein).

#### 4. What's Next?

Trust is a well-researched concept in the information systems research discipline. The richness and diversity of this concept are reflected in many methodologies used to study trust (including theoretical reasoning, literature reviews, case studies, surveys, field data, archival data, as well as the combination of these approaches) and the variety of trust-based relationships (Söllner et al., 2018). We do not want to compromise on this foundation.

However, the Covid-19 pandemic has shown another magnitude of the meaning and interdependence of trust in information systems, rules associated with handling health data by states, and each individual's behavior. In particular, the pandemic has generated sufficient evidence to conclude that trust at both the systemic and human levels has not been fully achieved, and in many parts of the world, trust has yet to be achieved.

We argue that the ability to achieve digital trust depends on two very different and often opposing variables, i.e., (i.) international and even global collaboration that enables the information sharing, data collection, analytics, and communication required to support multi-national commitments and coordination, and (ii.) individual humans must trust that any personal information to be collected about health conditions (such as test results, treatment plans, or long term side effects) or their behavior (such as contact tracing, use of protective masks and other preventive activities) will be used appropriately for the collective benefit of a larger community and not adversely used to harm the individual's current or future quality of life. This is far from being a straightforward task - however, establishing digital trust is vital for surviving the next pandemic. Why?

In this paper, we want to emphasize the necessity of building a Plan A, i.e., structured, disciplined processes employed to engineer the response plans (which are "Plan Bs") long *before* the pandemic crisis requires Plan Bs to be launched. Plan A must express and execute the rules, information assets, and procedures to help all stakeholders decide to affirmatively trust Plan B before the pandemic accelerates beyond control. To this end, we are initiating a discussion on digital trust (using deliberately provocative theses) from a practical perspective rather than from a scientific, measurable construct. Let us ask ourselves what really makes digital trust work? How does the triad of rules, resilience, and reliance help us deal with current and future pandemics (and other potential crises)? What processes can be operationalized on the basis of digital trust and used to limit the cascades of negative events in disaster situations? We hope we have set this point. Let us start a discourse on digital trust as an imperative for the survival of humankind in the next pandemic.

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## **Will the Platform Economy Become Decentralized? Analysis of Decentralized Platforms' Disruptive Potential Following Christensen's Theory of Disruptive Innovation**

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### **Abstract**

Digital platforms connect producers and consumers worldwide. The platform itself acts as a trusted intermediary matching market participant and assisting the conclusion of contracts. Today, most platforms have become quasi-monopolies, exploiting their market power by charging monopoly fees and monetizing customer data. With the advent of blockchain technology, a new form of platform-based business model, so-called decentralized platforms (DPs), emerged. Using self-executing digital contracts (smart contracts) and blockchain technology, DPs automate the matching process and contract execution without the need for a centralized intermediary. By doing so, DPs drastically reduce transaction fees and return data sovereignty to the platform user. Consequently, DPs are considered to potentially disrupt the platform economy. To analyze DPs disruptive potential, the characteristics distinguishing DPs from their centralized counterparts were identified and analyzed following Christensen's theory of disruptive innovation. The findings attest that DPs have the potential to disrupt the platform economy in the sense of a low-end or even new-market disruption. In particular, the increasing popularity of blockchain and cryptographic tokens accelerates the growing prevalence of DPs, paving their way to become a severe threat to centralized platforms.

### **Keywords**

Blockchain, decentralization, disruptive innovation

## 1. Introduction

Lead by the emergence of internet-related technologies, platform-based business models (PBM) have disrupted traditional industries, giving rise to the platform economy (Kenney & Zysman, 2016). Companies such as Alibaba, Amazon, Tencent, Uber, and Airbnb build platforms that enable users to offer their goods and services online (Hagiu & Wright, 2015). The platform itself acts as an intermediary, the so-called gatekeeper (Parker et al. 2016), coordinating the interacting user sides (Caillaud & Jullien, 2003; Rochet & Tirole, 2003) without owning the products being sold. Therefore, since no production and storage costs arise, platform-based business models (PBM) were able to benefit, compared to traditional business models such as retail stores and hotels, from their ability to scale without further investment (Moazed & Johnson, 2016). Moreover, by generating cross-side network effects, PBM accumulate users rapidly (Eisenmann et al., 2011; Parker et al., 2016), consequently becoming a severe threat to established companies, even market leaders (Glaser et al., 2019). Many PBM have turned into quasi-monopolies demanding monopoly fees, therefore becoming subject to regulatory authorities (Beck et al., 2018). Using their monopoly-like status, the companies behind PBM are criticized for insufficiently distributing the produced value among those who mainly contributed to the value production, namely the buyer and the seller (De Filippi, 2017; Wright & De Filippi, 2015). Addressing this matter, new forms of platform-based business models, so-called decentralized platforms (DP) (Tumasjan & Beutel, 2019), emerged, building upon technological innovation, the blockchain technology. DP are considered to have a disruptive potential (Brennan et al., 2019), thereby becoming the harbinger of a new economic era, the 'true' platform economy (Belk, 2014), where monopolistic companies, in their role as the platform owner, become obsolete (Trabucchi et al., 2019; Voshmgir, 2019) while the value produced is being directly distributed among the platform users (Wright & De Filippi, 2015).

Today, we observe that DP such as OpenBazaar (decentralized marketplace), OPUS (decentralized music sharing platform), and Steemit (decentralized social media platform) are starting to take their first steps into market segments being dominated by monopolistic centralized platforms (De Filippi, 2017; Perscheid et al., 2020; Tumasjan & Beutel, 2019). While DP are still far from representing a severe threat to those monopolistic centralized platforms today, the platform economy's future remains uncertain. To pigeonhole the future potential and, therefore, the role DP may play in the platform economy, their disruptive potential needs to be analyzed. Hence, this paper seeks to answer the research question:

*Can decentralized platforms become a disruptive innovation for the platform economy, and if so, which type of disruptive innovation is the most likely?*

To answer this question, the key characteristics distinguishing DP from centralized platforms were identified and, underpinned by selected examples of actual DP, applied to Christensen's theory of disruptive innovation.

The remainder of this paper is structured as follows. First, the procedure of the performed literature review is presented followed by the theoretical background of the paper. Here,

Christensen's theory of disruptive innovation is displayed followed by an overview of the literature on platform-based business models, particularly their competitive advantages over traditional business models. Building thereon, the findings of the literature review are presented, focusing on the characteristics distinguishing DP from their centralized platform-based counterparts. Section three then presents the categorization of DP following Christensen's theory of disruptive innovation. In section four, the findings are discussed and further elaborated, including the presentation of the limitations and the recommendations for further research. Eventually, a short conclusion summarizing the main findings of the paper is presented in section five.

## **2. Methodology and Theoretical Foundation**

### **2.1. Literature review**

The literature review follows the recommendations of Vom Brocke et al. (2009). Using the search query "(blockchain AND decentralized OR autonomous AND decentralization AND platform AND innovation)" the AIS eLibrary, including the leading IS conferences, ICIS, ECIS, AMCIS, PACIS, and HICSS were consulted. Since DP only became prevalent through Satoshi Nakamoto's white paper on the bitcoin in the year 2008 (Nakamoto, 2008), the research period was determined to 2008 until today, covering approximately thirteen years of research. The first search resulted in a total number of 135 papers. Afterwards, inclusion (i.e. peer-reviewed, selected journal and conference papers) and exclusion criteria (i.e., panel setups, abstract-only, workshops, proposals, research-in-progress) were applied, a total number of 46 papers remained. Following the recommendations by Vom Brocke et al. (2009), these papers were screened regarding their thematical fit based on their title, abstract, and keywords, resulting in a total number of 37 papers. Secondly, since the number of scientific papers on DP found in the databases mentioned above was quite small, a forward and backward search was performed along with an additional search using Google Scholar, allowing the search for relevant papers from other disciplines as well as further relevant magazines, such as the Harvard Business Review (Jacso, 2005). Using the same search query, the search results were screened based on the respective titles, abstracts, and keywords. After reviewing 51 papers, saturation was found since no further relevant information could be obtained. As a result, five papers were added, resulting in a total of 42 papers. A total of 42 papers were then read and analyzed according to their fit to work out the main characteristics of DP, resulting in a total number of 29 papers being considered relevant.

### **2.2. Christensen's theory of disruptive innovation**

The term innovation is strongly connected to Harvard professor Clayton Christensen, the founder of the theory of disruptive innovation. In his books "The Innovator's Dilemma" (1997) and "The Innovator's Solution" (2003), Clayton Christensen and his co-author Michael Raynor explore and answer the question of why companies, even though being well-established in the market and seemingly doing everything right, fail (Christensen, 1997; Christensen & Raynor, 2003). Based on a variety of case studies of the U.S. hard disk drive and steel industry through the early 1990s, Christensen and his colleague found that the main reason for incumbent companies' failure is not missing willingness to invest

in technology but failing to identify and to implement disruptive technologies at an early stage (Christensen, 1997; Christensen & Raynor, 2003).

Since not every new technology is necessarily an innovation having the potential to disrupt markets, Christensen provides a definition for innovation. Furthermore, he distinguished between two types of innovation, sustainable and disruptive innovation. Moreover, he specified the term disruptive innovation by subdividing it into "*low-end disruption*" and "*new market disruption*". Drawing on this categorization, Christensen explains the different types of innovation, including the difficulties for established companies to recognize and successfully implement them successfully. Consequently, according to Christensen's theory of disruptive innovation, the disruptive potential of a technology can be classified along with the following three steps:

**First**, the analysis of whether a technology-based product or service is to be classified as an *innovation*. Christensen thereby defines innovation as a change in technology, encompassing "a process by which an organization transforms labor, capital, materials, and information into products and services of greater value" (Christensen, 1997; Christensen & Raynor, 2003).

**Second**, the analysis of whether an innovation is to be regarded as a *sustaining* or *disruptive* one. Following Christensen, a sustaining innovation creates better products or services that can be sold for more money to high-end customers. These products have to outperform incumbent market-leading companies' products using innovative improvements that can either be achieved on a year-by-year basis or by directly introducing them to the market (Christensen, 1997; Christensen & Raynor, 2003). Entrant companies aiming to disrupt markets sustainingly, therefore, orient their value proposition, respectively their innovative capacities along the dimensions that high-end customers desire. In the case of a sustaining innovation, new or smaller companies rarely stand a chance when entering the market. Here, established companies are more likely to win the battle against emerging companies, as they have both the resources and the motivation to defeat emerging companies by taking advantage of their stronger market position (Christensen et al., 2015).

Contrary to sustaining innovation, *disruptive innovation* provides a different approach. Christensen defines disruptive innovation as a process where a smaller company with fewer resources can successfully challenge an established incumbent company by introducing technology-driven products and services that are not as good as currently available products but offer other benefits. Typically, these products or services are simpler, more convenient, and less expensive, therefore appealing to new or less demanding customers (Bower, 1995; Christensen et al., 2015).

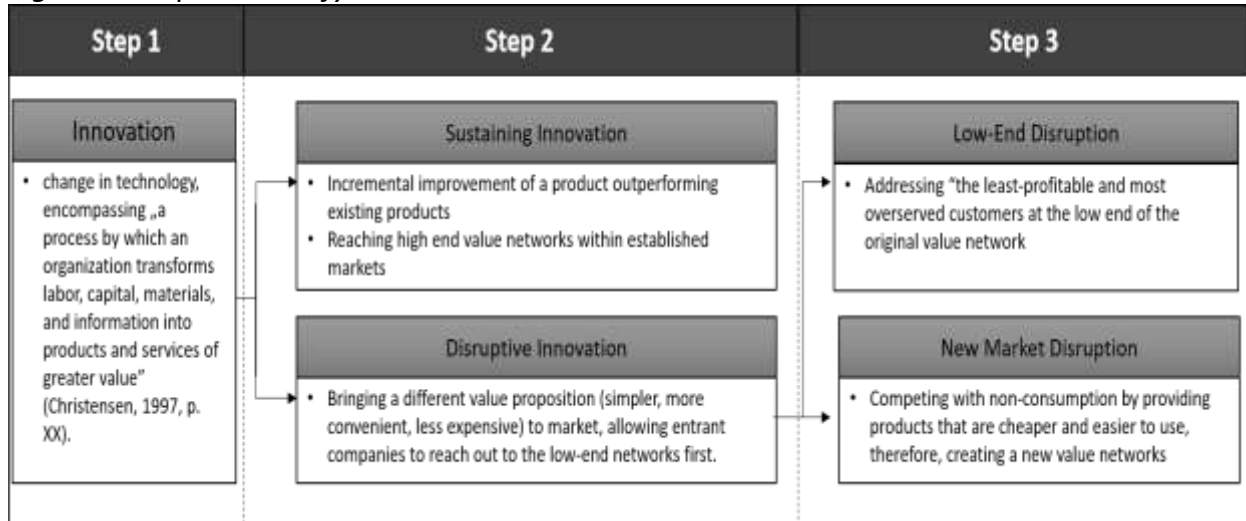
Christensen subsumes that established companies are not inclined to create or implement disruptive technological innovations into their business because they are trained to listen to their valuable customers, therefore improving existing products and services. In doing so, they exceed the needs of high-end customer segments while at the same time ignoring the needs of other segments, like low-end customer segments. Entrant companies can easily target those ignored segments by offering a slightly

different value proposition that encompasses disruptive innovations with segment-specific characteristics. Especially start-ups recognize these niches and consequently align their business model to those low-end value networks, enabling them to grow alongside the big companies within the market. After the disruptive technology-driven product or service gains a foothold in those niche markets, the entrant companies, having already integrated the disruptive technologies, can improve their offered products and services by delivering features and performances that the mainstream customers (high-end customers) desire. At this point, they directly address the mainstream market being led by established companies. Once this happens, it may be too late for the former established market-leading companies to adapt to those technologically-driven new functionalities. Hence, the disruptors begin to dominate the market (Christensen, 1997; Christensen & Raynor, 2003). Consequently, even though disruptive innovations may underperform the established products today, they might become fully performance-competitive in that same market tomorrow (Christensen, 1997). When this happens, the former entrant companies have a significant advantage over the established company to become the new market leaders.

**Third**, despite the distinction between sustaining and disruptive innovation, Christensen & Raynor further specified the field of disruptive innovation by distinguishing between low-end- and new market disruption. Companies aiming at low-end disruption address existing target markets (low-end customer segments). In contrast, new-market disruptions create new target markets by addressing customers who would not have used the respective products and services without the disruptive innovation. Therefore, new market disruptions compete with non-consumption by providing products or services that differ significantly from the existing products on the market, for example, in terms of key characteristics of the product, the service, the price, or the usability. Here, the innovation must enable a new customer group to access the products or services. Thus, getting new customers who would not have been using these products and services without the product or service changes resulting from the disruptive innovation (Bower, 1995; Christensen & Raynor, 2003).

Figure 1 summarizes the three-step process to classify a technology-driven innovation according to Christensen and Raynor (Christensen, 1997; Christensen & Raynor, 2003).

Figure 1: Steps to classify innovations



Source: Christensen (1997); Christensen & Raynor (2003).

### 2.3. Platform-based business models

To analyze the disruptive potential DP may have on the platform economy, we first need to understand what platform-based business models were. Therefore, the main characteristics of PBM were presented, focusing on the competitive advantages that once allowed them to disrupted traditional industries (Moazed & Johnson, 2016). PBM are characterized by the concept of two-sided, respectively, multi-sided markets (Boudreau & Hagiu, 2009; Eisenmann et al., 2011). Multi-sided platforms "cater two or more distinct groups of customers...[where]... members of one customer group need members of the other group for a variety of reasons. The platform helps these customers get together in many ways and thereby creates value for these customers that they could not readily obtain without the coordination that the platform provides" (Evans & Noel, 2005). The platform owner interacts as an intermediary (gatekeeper) responsible for the growth and the evolution of the platform (Casey & Töyli, 2012).

Consequently, the platform itself, respectively, its functionalities, are the product and the service the platform owner offers to its customers. Therefore, his main task is to establish access to those products and their functionalities to all platform users (Hagiu, 2007). Compared to traditional business models, PBMs are more cost-effective and flexible since platform providers do not own and, consequently, do not need to store the products they offer. This gives them 'long-tail advantages, i.e., the possibility to offer a greater range of products, including niche products (Ghazawneh & Henfridsson, 2015; Moazed & Johnson, 2016). To compete or even outperform traditional business models, PBMs need to acquire a critical mass of users (buyers and sellers) to generate positive cross-side network effects (NWE). Hereby "the value to customers on one side of a platform typically increases with the number of participating customers on another side" (Hagiu, 2014), (Evans & Schmalensee, 2010; Ruutu et al., 2017). Generating NWEs is, therefore, a crucial factor for the success or failure of any PBM (Hagiu, 2014). Consequently, the creation of NWE is often referred to as a double-edged sword since it creates high market entry barriers for competing platforms, while

at the same time, being challenging to be realized due to the so-called chicken-and-egg problem "no side will join without the other or others" (Hagiu, 2014).

One approach to address this problem is, according to (Parker et al., 2016), to generate incentives for both user sides simultaneously (buyers and sellers). Further, the generation of switching user sides where users may participate as buyers and sellers simultaneously is also referred to as a practical approach towards getting users to use a platform and reinforcing NWEs (Parker et al., 2016). Notwithstanding both approaches, pricing remains one of the critical issues for users to choose a platform (Eisenmann et al., 2011). Rochet & Tirole (2003) argue that the business model's design and, herein, the pricing model is critical to get both sides on the platform and, therefore, is decisive to generate NWEs (Rochet & Tirole, 2003). NWEs intensify the competition between platforms in competitive markets, thereby reducing their profits (Armstrong, 2006). Self-reinforcing NWE can, therefore, lead to concentration tendencies on the market, up to the so-called "tipping" where one platform outperforms all others, gathering all users. The market would then be served by one platform, whereas the other platforms were eliminated, as they could not reach a critical mass anymore (Evans & Schmalensee, 2008).

Scenarios withstanding this generation of platform monopolies are those where users do "multi-homing" (Evans & Schmalensee, 2008) by using several platforms simultaneously. Evans & Schmalensee (2008) see multi-homing as the result of a horizontal platform differentiation in which competing platforms differentiate themselves by addressing specific user groups, leading to the emergence of several specialized platforms being distinguished by their particular "features".

#### **2.4. Decentralized platform-based business models**

DP are supposed to present a valuable alternative to centralized, monopolistic platforms by automating the matching process and contract execution using self-executing digital contracts (smart contracts) and blockchain technology. DP, thereby, represent a unique form of PBM because, on the one hand, they were able to exploit the advantages of PBMs mentioned above and, on the other hand, by incorporating the technological innovation of blockchain technology together with smart contracts, they exhibit characteristics that clearly distinguish them from established centralized PBM.

To analyze the disruptive potential of DP, these unique characteristics need to be identified. Table 1 presents an overview of the unique characteristics distinguishing DP from centralized platforms derived from the literature review on decentralized and blockchain-based platforms in the field of IS and business management science. Characteristics being addressed by the authors within the respective papers were marked with an X.

Table 1. Overview of the literature-derived characteristics distinguishing DP from centralized platforms

Authors	Characteristics											
	Decentralized governance	Application of blockchain and smart contracts	Role of cryptocurrencies	Automated execution of transactions	Transaction security (tamper resistance, immutability)	A high degree of anonymity	Corporate transparency	Data security	Provision of financial incentives	Ideological motivation	Technology and community-based trust	Cutting out the middlemen
Agrawal et al. (2021)		X	X	X	X	X	X	X			X	
Beck et al. (2016)	X	X	X	X	X		X	X				
Beck et al. (2018)	X	X	X	X	X		X	X	X	X	X	X
Chen & Bellavitis (2020)	X	X	X		X	X	X				X	
Chen et al. (2020)	X	X			X		X			X	X	X
Davidson et al. (2016)	X	X	X	X				X	X	X	X	X
De Filippi (2017)	X	X		X		X	X	X	X	X	X	X
Dutra et al. (2018)	X	X	X	X				X	X	X		X
Esmat et al. (2021)		X		X	X	X	X	X	X		X	X
Glaser et al. (2019)	X	X		X	X	X	X	X	X	X	X	
Hsieh et al. (2018)	X	X	X	X	X		X				Y	
Kim & Chung (2019)	X	X	X				X	X	X		X	
Kollmann et al. (2020)	X		X		X		X	X	X	X	X	X
Macrinici et al. (2018)		X		X			X	X			X	
Mohanta et al. (2018)		X	X	X	X	X	X					
Pereira et al. (2019)	X	X	X	X	X	X	X	X	X	X	X	X
Perscheid et al. (2019)	X	X	X	X	X	X	X	X	X	X	X	X
Schneck et al. (2020)	X	X	X	X			X		X		X	X
Schweizer et al. (2017)	X	X	X	X	X	X	X	X	X			X
Seidel (2018)	X	X	X	X	X				X	X		X
Subramanian (2018)	X	X	X	X	X	X	X	X	X			
Tapscott & Tapscott (2016)	X	X	X	X			X			X	X	X
Trabucchi et al. (2019)	X	X		X	X	X	X		X		X	X
Tumasjan & Beutel (2019)	X	X				X		X	X	X	X	X
Voshmgir (2019)	X	X		X			X	X	X	X	X	X
Wörner et al. (2016)	X	X	X		X				X			X
Wright & De Filippi (2015)	X	X	X	X	X		X		X	X	X	X
Xu et al (2019)	X	X	X	X			X	X	X	X		X
Yin et al. (2019)	X	X	X	X	X	X	X					X

## 2.5. Unique characteristics of decentralized platforms

*"Just about everything Uber does could be done by smart agents on a blockchain. The blockchain's trust protocol allows for cooperatives or autonomous associations, to be formed and controlled by people who come together to meet common needs. All revenues for services (except for overhead) would go to members, who also control the platform and make decisions through consensus."* (Tapscott & Tapscott, 2016)

This quote by Tapscott & Tapscott (2016) adequately summarizes the (ideological) motivation to build DP. Namely, to enable a fairer distribution of the created value among those, how actively contributed to the value creation, the buyers, and the sellers (De Filippi, 2017; Tumasjan & Beutel, 2019). To achieve this goal, DP aim to cut out the middleman, the platform provider, thereby reducing or even abolishing transaction fees (Kollmann et al., 2020; Xu et al., 2019). To run the platform, DP use the blockchain technology and smart contracts (Schneck et al., 2020; Tumasjan & Beutel, 2019). The blockchain technology, being an immutable append-only distributed database that enables validated tamper-resistant transactions across a network of participating nodes (Agrawal et al., 2021; Subramanian, 2018), provides the protocol defining the main rules that will govern the platform functioning and the data infrastructure (Pereira et al., 2019; Perscheid et al., 2020). Consequently, blockchain technology is the foundation that enables the execution of transactions using smart contracts (Kim & Chung, 2019; Seidel, 2018). Once programmed, these self-enforcing digital contracts (smart contracts) do not require any human intervention to be executed (Wright & De Filippi, 2015). Smart contracts enable transactions to be completed through simple opt-in actions using a predefined set of rules, including the rights and obligations that need to be fulfilled for the contract to be executed (Voshmgir, 2017). The rules are defined in a digital, machine-readable form (formalization). Thus, once both parties (humans or machines) agree to the terms and meet the contractual requirements, the smart contract is automatically executed by a computer or computer network (Glaser et al., 2019) and recorded on the blockchain (Beck et al., 2018). A smart contract's functionalities can thereby range from a simple additional check-up to the representation of entire service logic, such as an escrow mechanism or asset registration service (Glaser et al., 2019). The creator of the smart contract defines control over the contract. Hence, the controlling entity can be the creator himself, a group of participants, or no entity at all. In the case of the later, "an autonomous entity [...] acts according to its programmed logic, no matter who interacts with it [...] free of any third party's influence" (Glaser et al., 2019), enabling the creation of new forms of software-based organizations (including PBM), such as decentralized autonomous organizations (DAOs) and decentralized Organizations (DO) (Beck et al., 2018; Voshmgir, 2017; Wright & De Filippi, 2015).

In the case of a DAO, the organization, once implemented, can operate autonomously since all rules needed are implemented in the source code. Transactions are executed once the predefined conditions are met (Beck et al., 2016; Tapscott & Tapscott, 2016). Hence, a DAO could own, exchange, or trade resources and interact with humans or machines without the need for human involvement (Wright & De Filippi, 2015).

Yet, in practice, DAOs do not exist. Instead, DO, are being developed. DO are organizations

whose creators increase the degree of decentralization through continuous decentralization of governance structures, mostly aiming to further develop the organization towards becoming a DAO sometime (Chen & Bellavitis, 2020; Tumasjan & Beutel, 2019; Voshmgir, 2017). DO are governed by its users (Wright & De Filippi, 2015), enabling shareholders to participate in strategic decision-making using decentralized voting mechanisms. These mechanisms are characterized by the fact that no decision or transaction is carried out unless a predefined amount of parties agree to it (Wright & De Filippi, 2015). Consequently, no trusted party that controls and issues decision rights is needed since trust in code enables the participation of all, preventing problems that might result from corruption and opacity (Glaser et al., 2019; Wright & De Filippi, 2015). Further, in case of discrepancies, for example, between contractual partners, DO usually offer community-based mitigation services like escrow and dispute resolution services (Beck et al., 2018; Wörner et al., 2016).

In addition to decision-making, DO also involve users in the development and evolution of the business model, e.g., in the case of DP, by making the platform's source code publicly available and providing channels such as GitHub through which users can contribute by suggesting ideas or even writing source code (Tumasjan & Beutel, 2019). Users of DP mostly belong to a particular niche of technically affine individuals interested in this new technology and motivated by the idea (idealistic value) of a community-based platform without a monopolistic intermediary (Trabucchi et al., 2019; Wörner et al., 2016). Operating very closely to its customer networks enables DP to align its value proposition, respectively (Kim & Chung, 2019; Trabucchi et al., 2019). Most DP offer some unique selling propositions, such as a high level of data security (Davidson et al., 2016; Esmat et al., 2021), resulting from the absence of a central operator being able to collect and sell obtained data to third parties, as well as a high degree of corporate transparency enabled by the public disclosure of the source code (Chen & Bellavitis, 2020; Schweizer et al., 2017). Furthermore, reinforced by the exclusive use of crypto-currencies (Hsieh et al., 2018; Mohanta et al., 2018), current DP offer a high degree of anonymity, especially since most DP do not require authentication from their users (Schweizer et al., 2017; Subramanian, 2018).

### **3. Classification of DP Potential to Disrupt the Platform Economy Following Christensen's Theory of Disruptive Innovation**

Based on the conceptualization shown in Figure.1, the disruptive potential of DP will subsequently be analyzed following Christensen's theory of disruptive innovation. For this purpose, the literature-derived characteristics of DP will be applied and substantiated by examples of selected DP.

Step 1: To represent an innovative technology-driven approach, DP have to provide a change in technology through which "an organization transforms labor, capital, materials, and information into products and services of greater value" (Christensen, 1997).

Using blockchain technology together with smart contracts, DP provide a new approach through which the "value" of products and services is enhanced. Although the idea behind

smart contracts was developed as early as 1994 by Nick Szabo (Szabo, 1994), the functionalities of smart contracts could only unfold their entire potential once applied to blockchain technology. Combining these two technologies enables a simplified and transparent process of transaction execution and data storage, making smart contracts tamper-resistant and (in the case of an open blockchain) immutable. Consequently, applying smart contracts on the blockchain represents an innovation that has not been offered before (Beck et al. 2018; Glaser et al., 2019).

An example of a technology-driven innovative approach is the Thetatoken, an open-source platform using blockchain technology and smart contracts to enable high-quality video streaming without buffering issues. To do so, users are incentivized to share their unused storage and bandwidth to improve infrastructure, especially in regions with poor connectivity. Users who share their storage and bandwidth get rewarded through tokenized assets, TFUL, created on the Theta blockchain (Thetatoken, 2021).

Step 2: The second step encompasses the analysis of whether DP may become a sustaining or disruptive innovation. Following Christensen's definition, a disruptive innovation enables "a smaller company with fewer resources [...] to successfully challenge established incumbent businesses" (Christensen et al., 2013) by introducing technology-driven products and services that are not as good as currently available products but offer other benefits that low-end networks are interested in (Christensen et al., 2013). In contrast, sustaining innovation aims to address high-level networks by improving products, thereby outperforming existing market-leading companies' products.

Based on the findings of our literature analysis, DP are to be categorized as a potentially disruptive innovation. The reasons are twofold: (1) Most DP are relatively small projects being developed by motivated, like-minded programmers (Wright & De Filippi, 2015). Since building a DP primarily requires programming skills, and most DP publicly offer their source code for developers to cooperate or even fork the code and build their own DP, the barriers to build their own DP are comparatively low (De Filippi 2017; Tumasjan & Beutel 2019). (2) DP do, at this point, not outperform their centralized competitors (Perscheid et al., 2020). Since they represent comparatively small projects being in an early stage of their development, DP cannot compete with their centralized counterparts in terms of the number of services offered.

Still, compared to the incumbent (centralized) platforms, DP introduce a new form of a technology-driven platform (the blockchain-based platform) (Dutra et al., 2018), which, even though not being competitive (yet), offers benefits their centralized counterparts do not. For example, the privacy of data storage (Tapscott & Tapscott, 2106; Tumasjan & Beutel, 2019; Yin et al., 2019), monetary benefits through the reduction of fees (Subramanian, 2018; Voshmgir, 2017), a high level of corporate transparency (Glaser et al. 2019; Yin et al., 2019), and anonymity (Schweizer et al., 2017). Further, the decision to use a DP is also an ideological choice since many users wish for a fairer distribution of the created value (cutting out the middlemen) (De Filippi, 2017; Trabucchi et al., 2019). Accordingly, DP offer a different value proposition than the market-leading centralized platforms (Kim & Chung, 2019; Seidel, 2018), allowing them to address "low-end value networks", particularly in niche markets (Wörner et al., 2017).

An analysis of the white papers of numerous DP reveals that many DPs mostly copy existing business models of centralized platforms and modify them by integrating specific features of DP, yet without integrating substantial differences with regard to their functionalities.

One example is OPUS, a music-sharing platform that offers a decentralized alternative to the centralized platforms of Spotify and Apple Music. OPUS uses blockchain technology to store music content and ensure fair compensation for artists as well as transparent and reliable payment rules. By introducing its own digital token, the OPT token, OPUS enables artists to receive earnings and to decide how those earnings should be distributed between band members or even their fans for each song separately (Bokang & Chenhao 2018; OPUS, 2021).

Another example is OpenBazaar, a decentralized marketplace that allows users to buy and sell goods via a decentralized peer-to-peer network (O'Ham, 2016; Tumasjan & Beutel, 2019; Wörner et al., 2016). In doing so, OpenBazaar offers its users a cost-free alternative to centralized platforms such as Craigslist. The only payment method used on OpenBazaar are cryptocurrencies. Moreover, OpenBazaar does not require authentication from its users, allowing them to access and use the platform anonymously (OpenBazaar, 2021).

In the field of social media platforms, Steemit and DTube are particularly noteworthy. Both DP run on the Steem blockchain and promote community building and valuable content generation by distributing tokenized assets (DTube, 2021; Kim & Chung, 2019; Steemit, 2021). While Steemit mainly addresses a social news aggregation site's business model, like Reddit, DTube offers a community-driven add-free decentralized alternative to Youtube with little to no moderation (DTube, 2021).

Another example of a DP that provides different functionality than existing platforms is Guts Tickets. Guts Tickets is a decentralized ticketing platform that uses blockchain technology to provide a system for registering ownership of event tickets. To prevent fraud and overpricing of secondary tickets, tickets registered on Guts Tickets can only be sold at a fixed price set by the event organizer or artist (GUTS Tickets, 2021).

Step 3: After having classified DP to potentially become a disruptive innovation, we need to analyze whether a low-end or a new market disruption is conceivable. As a reminder, low-end disruption is characterized by addressing existing low-end customer segments, whereas new market disruption addresses new value networks by attracting customers who would not have used the product or service without the technological innovation (Bower & Christensen, 1995; Christensen & Raynor 2003).

In addition to the unique functionalities, DP offer its users, the usability of the services plays an essential role when choosing to use a DP (Tumasjan & Beutel, 2019). To this end, Sam Patterson, the COO of OB1 (the company that developed OB1), acknowledged in an interview that "Lots of Bitcoin applications have the ability to do technically challenging (and valuable) things, but often have difficulty finding adoption because they are not easy to use" (O'Ham, 2016). Consequently, in addition to DP's features, their usability is also considered in the subsequent analysis.

Among the listed characteristics distinguishing existing DP from their centralized counterparts, the implication of cryptocurrencies being the only possible payment method is particularly noteworthy in terms of usability. Using cryptocurrencies, DP can, among other things, provide increased anonymity and, due to the implications of smart contracts and blockchain technology, execute and store closed contracts rapidly (Glaser et al., 2019; Yin et al., 2019). Nevertheless, the use of these underlying payment services (cryptocurrencies) also requires enhanced technological resources and technical knowledge (Arias-Oliva et al. 2019). Therefore, it is conceivable that most users of DP are tech-savvy people who switch from centralized platforms to DP because they were either interested in the new technology and the benefits associated with it or due to conviction (cutting out the middlemen) (Glaser et al. 2019; Tumasjan & Beutel, 2019; Wright & Filippi 2015). Accordingly, these users represent a specific, already existing, niche of the entire value network (Wörner et al., 2017). Hence DP are predominantly to be classified as "low-end disruption" because although the costs of using DP are usually cheaper, the implementation and the use of a DP remains at this point more complicated than its centralized counterpart.

Concerning "new-market disruption", we do not want to exclude the possibility that DP may also trigger technology-driven users into using platforms they have not used before. Looking at our exemplary cases, we see that in addition to copying existing business models, some DPs are beginning to develop unique functionalities that extend their value proposition in ways that may even be relevant in terms of new market disruption.

OPUS, for example, offers novelty by providing a better way to allocate received payments selectively (OPUS, 2021). Similarly, Steemit has extended the existing business model of a typical social media platform such as Reddit by offering a content-based reward system, awarding authors creating valuable content with tokenized assets (Kim & Chung, 2019 ; Steemit, 2021). However, since at this point, most DP mainly copy centralized platforms' business models without offering many exceptional services or features, the primary categorization of DP as low-end disruption is, for now, more conceivable.

#### **4. Discussion**

Applying the literature-derived findings on the structure and functionalities of DP to Christensen's theory of disruptive innovation, DP are predominantly to be characterized as a potential low-end disruptive innovation having the possibility to permanently change the platform economy. DP, represent a new form of platform-based business models, using a new technological approach, blockchain technology, and smart contracts, thereby serving primarily low-end customers that are first and foremost interested in the new functionalities and the resulting benefits of the blockchain technology, i.e., transparency (Glaser et al., 2019), data security and anonymity (Dutra et al., 2018; Schweizer et al., 2017), monetary gains (Beck et al., 2018), as well as the ideological motivation to redistribute the produced value by cutting out the middlemen (De Filippi, 2017). Besides the categorization as potential "low-end disruption", it is also conceivable that the benefits resulting from the implication of the blockchain technology and cryptocurrencies may also encourage new customers to use DP, in the sense of a "new-market disruption", thereby enhancing DP disruptive potential.

In particular, by continuously evolving the existing business models using technological enhancements enabled by the use of blockchain technology and smart contracts, DP's value proposition is expected to expand towards the development of services and products that significantly differentiate DP from existing centralized PBM.

Today we see an ongoing increase in the application of blockchain technology into various business fields, leading to blockchain no longer being considered ground-breaking and merely promising, instead of becoming an integral part of organizational innovation (Pawczuk et al., 2020). Taking these developments into consideration, it is subsumable that the ongoing adaptation of blockchain into business models and enterprises (Lacity, 2018), as well as the increasing use of cryptocurrencies and tokenized assets (Voshmgir, 2019), will lead to a lower inhibition threshold towards the usage of DP. The integration of blockchain-based business models into our daily lives can, therefore, lead to consumers being increasingly inclined to use these, including DP, in their daily lives. Once the customers start using DP in the sense of "multi-homing" (using various platforms simultaneously) instead of just using one established centralized platform (single-homing), they enable DP to establish themselves in the market and thus pave the way for market disruption.

Moreover, since DP actively involve their users in the development of the platform (Perscheid et al., 2020), they were able to adjust their offers corresponding to the customer's needs. According to Christensen's theory of disruptive innovation, this ongoing improvement of the platform's value proposition, primarily focusing on the usability of the products and services, enables DP to acquire customers more rapidly, including customers from high-end value networks. In this case, the self-reinforcing mechanisms of the NWEs would lead to rapid growth of DP, thereby potentially outperforming the incumbent platforms, thus becoming a serious threat to their future existence.

Given these insights, we no longer need to ask ourselves whether DP have disruptive potential, but rather, whether the established centralized platforms have the means to defeat DP by applying the benefits that DP offer to their business models. Should they not be able to do so, they run the risk of becoming victims of the "innovator's dilemma" that once enabled them to disrupt entire industries.

With this work, the first step for researchers and practitioners is taken to observe and analyze the further development of DP dissemination. As noted above, the increasing popularity of cryptocurrencies and blockchain technology is expected to lead to a rapid increase in the popularity of DP. In this particular case, this work can be used as a basis to analyze the diffusion of DP from a low-end disruption addressing low-end value networks towards a market disruption, also targeting high-end value networks.

In the context of our obtained results, the limitations of this research also have to be pointed out. (1) Christensen's theory of disruptive innovation is foremost made for describing a phenomenon, not predicting it, (Christensen, 1997; Christensen & Raynor, 2003) Therefore, enhancing this research using various approaches towards analyzing the disruptive potential would be a valuable supplement for this paper. (2) Since this research is based on theoretically derived findings, taking it a step further by additionally applying case studies and interviews with developers, as well as users of DP would enrich the analysis of DP disruptive potential.

Including these multiple perspectives in the analysis would help to understand the developer's and user's motivation more precisely, thereby enabling the analysis of the diffusion of DP throughout different value networks. Further, researchers could compare representative cases of centralized- and decentralized platforms to elaborate on the respective competitive advantages and disadvantages of both kinds of PBMs (3) At this moment, only a few, merely semi-decentralized, DP exist (Beck et al., 2018; Perscheid et al., 2020; Tumasjan & Beutel, 2019). Consequently, the theoretically derived findings of this paper may deviate from practice. Therefore, a detailed case analysis of DP, including different degrees of decentralization, would enhance our understanding of the disruptive potential of DP towards market diffusion within the platform economy.

## 5. Conclusion

This paper analyzes the potential of DP to represent a disruptive innovation for the platform economy. Based on a literature review, characteristics were identified that distinguish DP from their centralized counterparts. Building thereon, the disruptive potential of DP was analyzed following Christensen's theory of disruptive innovation. Eventually, DP were categorized to predominantly represent a potential low-end disruption.

At this point, most DPs are mainly copying existing PBMs. However, some DPs have started to evolve their business models by implementing unique functionalities also enabling new market disruption. Consequently, with the increasing popularity and use of cryptocurrencies and the ongoing application of blockchain technology into various business fields, it can be assumed that DP have the potential to become a severe threat to the leading centralized platforms, disrupting the platform economy.

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## E-Commerce in the Times of Social Distancing

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### **Abstract**

Research on consumer behavior contributes to a better understanding of variables that have a significant impact on business competitiveness. We can assign a particularly important role to research into consumer behavior at a time that sets a precedent for the further development of the global market as such. The main goal of the presented study is to present partial results of a comprehensive research of the impacts of the COVID-19 pandemic on e-consumer behavior.

Through research into selected specifics of electronic commerce in the time of social distancing caused by the COVID-19 pandemic, we performed a three-stage empirical analysis of consumer community interactions on the marketing activities of selected leading e-commerce representatives. As the monitored communication medium, we chose the social network Facebook, which at the time of the outbreak of the pandemic represented the place of allocation of the dominant part of the interactions of consumers who moved their activities from off-line to on-line environment. For the purposes of the presented study, we focused on comparing the interactions of consumer groups of two geographical and language localizations of the leader of e-commerce in the Western world, Amazon. The cumulative number of fans of both fan pages was almost 10 million. In this sample, B2C and C2B interactions were recorded daily on the official fan sites Amazon.de and Amazon.co.uk during the 49 days of the Christmas season 2020/2021. Interactions took the form of user feedback in the form of likes, comments, or shares of marketing content posted in the form of posts by operators of a particular fan site.

The results suggest that the different locations of the Amazon platform show different characteristics in terms of both the number and timing of marketing activities on their fan

pages. Different characteristics are also shown by individual groups of consumers represented by fans of the given pages on the social network Facebook. As far as the British localization is concerned, the dominant part of user interactions occurs in the afternoon and early evening, which to some extent corresponds to the reference characteristics recorded before the outbreak of the pandemic. The German localization, on the other hand, shows an increase in interactions in the morning, with a significant slowdown in the afternoon and early evening, except for weekends. During the weekend, there is an almost complete attenuation of interactions with the arrival of the evening. It can be assumed that the different degree of restrictions associated with attempts to slow down the pandemic has caused a shift in established patterns of e-consumer behavior. Thus, users in different countries maximize the benefits of e-commerce significantly specifically with respect to their geographical location.

### **Keywords**

e-commerce, Facebook, Amazon, COVID-19, e-consumer behavior

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## Future of Meat and Meat Products Consumption

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### **Abstract**

The pandemic situation caused by COVID-19 has initiated questions related to the way of life, the lifestyle, the choice of food, or the reflection on the environment and climatic conditions. If we look at the Slovak consumer behavior and food choice, considering all the above aspects, as one of most discussed food groups is meat. Looking to the future and based not only on the pandemic situation, but also on the overall view of sustainability and the environment, it is necessary to appeal to the reduction of meat consumption. The aim of the paper is to identify Slovak consumer behavior in the meat and meat products market, as well as their perception towards meat analogues. Based on realized survey of a sample of 1,165 respondents up to 50 years, it can be stated that Slovak consumers is a nation with a strong meat culture and will not plan to significantly reduce meat consumption in the future. We have identified the factors significantly influencing meat consumption in the future, which are mainly animal diseases, poor animal welfare, food scandals, or meat adulteration, as well as the factors limiting meat consumption, which are mainly meat analogues. At present, Slovak consumers do not have eating habits towards the consumption of plant substitutes, cultured meat or edible insects. It is necessary for Slovak consumers to develop habits of consuming meat analogues and to accept all market conditions with regard to sustainability and a healthy environment.

### **Keywords**

Meat and meat products, future consumption, factors, meat analogues

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## 1. Introduction

The food market has recently been significantly affected by the pandemic situation resulting from COVID-19. The consumption of Slovak households is undergoing changes and trends based on the purchase of a larger amount of durable food and food with the longest possible consumption time. Basic foods, such as milk and dairy products, meat and meat products, bakery products or fruit and vegetables, were also purchased by Slovak consumers through e-shops. However, food consumption was largely influenced by food prices, which gradually increased due to the pandemic situation. One of the highest increases was recorded in the case of the food group meat and meat products. Slovak market and grocery stores in Slovakia offer mostly imported meat, the measures taken and restrictions at the borders could disrupt the flow of supplies of meat. In connection with the above, the self-sufficiency of the Slovak Republic in meat production, which is below the level of 40%, constant increase of consumer interest in Slovak meat, as well as favorable environment and climatic conditions were constantly appealed. Livestock farming and meat production are also linked to environmental protection and climate change. Recently, there have been developments in changes in consumer behavior resulting from the issue of the pandemic situation, climate change, as well as the volume and structure of food consumption. In the context of the above and based on current market requirements, it is necessary to focus on the future of food consumption, especially food group of meat, and outline the possible development of the meat and meat products market, which may be accompanied by eliminating meat consumption, by looking for an alternative diet or by changing the lifestyle of consumers.

## 2. Literature Review

The future consumer in meat and meat products market after a pandemic situation related to COVID-19 will be influenced by a number of factors and it is possible to assume his consumption that will not change significantly or on the other hand will be initiated to reduce meat consumption.

The first factor that will affect meat and meat products consumption is to increase consumers' knowledge and skills. Consumers' awareness about the consequences of excessive meat consumption and the reasons for eliminating meat consumption can lead to a gradual reduction in meat consumption. Furthermore, the reduction in meat consumption may result from the acquisition of knowledge on incentives for plant-based preferences and practical issues related to vegetarian cooking. At present, consumer knowledge of the negative effects of livestock production on the environment is insufficient (Stoll-Kleemann & Schmidt, 2016), as well as consumer knowledge of the nutritional value of plant foods, especially among middle aged people (Dibb & Fitzpatrick, 2014; Barr & Chapman, 2002). Dibb and Fitzpatrick (2014) also pointed to studies in which respondents reported a lack cooking skill with "meat-free" recipes and a lack of knowledge on how to use meat substitutes in their home-based recipes (Girod et al., 2014).

Another factor is habit and taste. Meat consumption is determined by habits and unconscious routines that tend to repeat (Stoll-Kleemann & O'Riordan, 2015). On the other hand, taste must also be considered as an important reason for meat consumption or, conversely,

avoiding meat consumption (Beardsworth & Bryman, 2004; Dibb & Fitzpatrick, 2014; Piazza, Ruby, Loughnan, Loung, Kulik, Watkins & Seigerman, 2015; Tucker 2014). Based on the fact that the production and supply system have a major impact on eating habits, it is necessary to build infrastructure that will support plant-based diets. It is necessary to create a suitable shopping and eating environment favorable to vegetarians and to support the development of new eating habits in order to eliminate meat consumption.

Related to the above the food environment can be considered as another factor supporting lower meat consumption. It is necessary to expand the range of tasty and available vegetarian products or other meat analogues (Stoll-Kleemann & Schmidt, 2016). According to Stoll-Kleemann and Schmidt (2016), political and economic factor can be considered as another factor determining future meat consumption. Insufficient support for animal production and rising prices of animal products may lead to a reduction in meat consumption.

Stoll-Kleemann and Schmidt (2016) add that social norms, roles and relationships have a significant impact on the amount of meat consumption. It is important to ensure the promotion of new social standards by emphasizing the role of vegan and vegetarian opinion leaders as role models for consumer behavior. The last factor is culture and religion and the associated promotion of new social and cultural norms concerning the reduction of meat consumption (Stoll-Kleemann & Schmidt, 2016).

Based on these factors, it is more than likely that meat consumers with a view to the future will be influenced by these aspects. Meat consumption is also affected by trends that can already be observed in the meat market.

New directions point to the possible negative impact of high meat consumption on human health, as well as the adverse impact of animal husbandry on the environment due to the production of greenhouse gases. On the other hand, it is important to note that there are no relevant studies to confirm the emergence of health problems from the appropriate consumption of individual types of meat. However, it has been shown that excessive consumption of red meat in particular, together with poor lifestyle and lack of exercise, can lead to health diseases.

In the context of the future development of the meat industry, it is important to note the projected increase in population, which implies that if the ambition of all consumers to consume meat and meat products unchanged, it is more than likely that meat production will not be able to meet demand. This is the reason why the latest trends come with substitutes for traditional meat in the form of cultured meat, plant-based meat substitutes, and edible insects. Meat analogues are nutritionally advantageous, produced in a more environmentally friendly way and have aggressive marketing. These aspects are key to why "future foods" can compete with traditional meat. On the other hand, the taste and enjoyment that consumers enjoy from consuming traditional meat is also an important factor. However, the current state of development of the preparation of meat analogues is already at a very high level, which allows products to be placed on the market that will resemble meat in nature (structure, color, texture, taste) but will be obtained other than by slaughtering livestock (Kameník & Král, 2020).

Meat analogues based on plant proteins are currently the most sought after by vegetarians and vegans (Kameník, 2017). The main sources of plant proteins used for the production of meat substitutes are mainly soybeans, wheat, legumes, mushrooms and oilseeds. With regard to plant-based meat substitutes, it can be stated that they are sought after mainly due to the content of necessary nutrients, including proteins, vitamins and minerals, they are a source of quality fiber and a healthy variety of the normal diet. These types of meat analogies include soy meat, tofu, tempeh, seitan, klaso, robi, smakoun. The offer of plant substitutes is currently to a sufficient extent on the Slovak food market and their range is constantly expanding (Kameník & Král, 2020; Karasová, 2017).

In recent years, there has been a growing public and scientific interest in novel insect foods (Tan et al., 2015). This may be due to its nutritional and environmental benefits. High nutritional values are due to the low content of saturated fatty acids, high digestibility and the presence of omega-3 fatty acids (Rumpold & Schlüter, 2013). Edible insects have the potential to become a major source of human nutrition and can be produced more efficiently than livestock (Abbasi, Abbasi & Abbasi, 2016; van Huis, 2013). Insects are considered an important source of fats, proteins and micronutrients (Nowak, Persinj, Rittenschober & Charrondiere, 2014; Rumpold & Schlüter, 2013) and can be produced with lower levels of greenhouse gas emissions and water consumption compared to conventional meat and, in addition, its breeding is efficient, less demanding on food and water intake and does not have a negative impact on the environment (van Huis, 2013). Insect consumption is already becoming a real trend and is the only known food source that can feed a growing population.

In the future, the meat market may also be affected by the production of cultured meat. However, the production of meat from laboratories is very expensive and contrary to ethics, as the production requires tissue from live animals, which is obtained alive from the livestock and laboratory meat does not taste like meat. However, laboratory-grown meat tissues would be of the highest quality, healthy, free from disease or artificial antibiotics (Alexander et al., 2017). Laboratory meat is produced without the presence of a livestock by culturing animal stem cells in a medium that contains nutrients and energy sources (Bhat, Kumar & Bhat, 2015). In the case of cultured meat production, it is necessary to deal with how consumers perceive a given type of food product (Hocquette, 2016). However, requirements are placed on laboratory meat in the form of the same taste, texture, appearance in comparison with classic meat. Products must meet the given attributes in order to be accepted by consumers, which is currently very difficult to achieve (Moritz, Verbruggen & Post, 2015).

We can also consider hybrid meat and meat products to be current on the meat market. In this case, they are products consisting of a combination of conventional meat and meat substitutes in the form of plant-based products. Thus, hybrid meat products are another way to replace and eliminate raw materials of animal origin (The Vegan Strategies, 2017).

Based on these aspects, with an emphasis on growing populations, climate change, general wealth, different lifestyles and the consequences of the pandemic situation, COVID-19 is more than likely that consumers in developed parts of the world, including the Slovak Republic, will become more interested in the diet as well as the way in which food is obtained and produced (King, 2019).

### 3. Material and Methods

The aim of the paper is to identify the behavior of Slovak consumers in the meat and meat products market even after the impact of the pandemic situation related to COVID-19, as well as to find out their perception towards meat analogues, which represent the future in consumer nutrition.

To achieve the aim, we conducted a consumer survey in the Slovak Republic. The aim of the survey was to find out how the consumption of individual types of meat will change in the next years, the factors determining the future consumption of meat and meat products, as well as the acceptability of meat analogues as a suitable alternative to traditional meat. The questionnaire survey was conducted on a sample of 1,165 respondents up to 50 years and was realized in the years 2019 - 2020 by an electronic version. Respondents involved in the questionnaire survey were divided into eight categories: gender (women 59.6%; men 40.4%), age (18-25 years 47.0%; 26-35 years 26.7%; 36-50 years 26, 4%); education (elementary 3.4%; secondary 47.5%; university education 49.1%), residence (rural 43.9%; city 56.1%), economic status (employed 49.3%; SZČO / entrepreneur 8 , 5%, student 37.3%, unemployed 0.6%, maternity leave 3.3%; other 1.1%), number of household members (1 member 5.0%; 2 members 17.4%; 3 members 28 , 5%, 4 members 31.2%, 5 members 12.5%, more than 5 members 5.4%), monthly income of the respondent (up to 500 euros 39.6%; 501 – 1,000 euros 35.9%; 1,001 – 1,500 euros 17.2%; 1,501 – 2,000 euros 5.1%; more than 2,001 euros 2.3%), monthly household income (up to 1,000 euros 13.8%; 1,001 – 2,000 euros 50.6%; 2,001 - 3,000 euros 25.7%; 3,001-4,000 euros 5.4%; more than 4,001 euros 4.5%).

The collected data were processed using Microsoft Excel and subsequently evaluated in the statistical programs IBM SPSS. In order to achieve a deeper analysis of research objectives, the following hypotheses were formulated:

- There is a dependence between the future consumption of individual types of meat and the demographic characteristics of the respondents
- There is a difference in the assessment of the factors determining the future meat and meat products consumption

The established hypotheses were tested using statistical tests: Chi square test of contingency, Mann-Whitney U test and Kruskal-Wallis test, as well as using multidimensional statistical methods, specifically categorical principal component analysis (CATPCA).

### 4. Results and Discussion

The results of the survey showed that approximately half of consumers do not plan to increase or decrease the consumption of individual types of meat in the future. Similar results were obtained by Latvala and others (2011), who state that more than 40% of consumers do not plan to change their meat consumption in the future.

In the case of poultry, 30.3% of respondents expect a reduction in consumption and 15.8% an increase in consumption. This may be due to the favorable prices of this type of meat with a

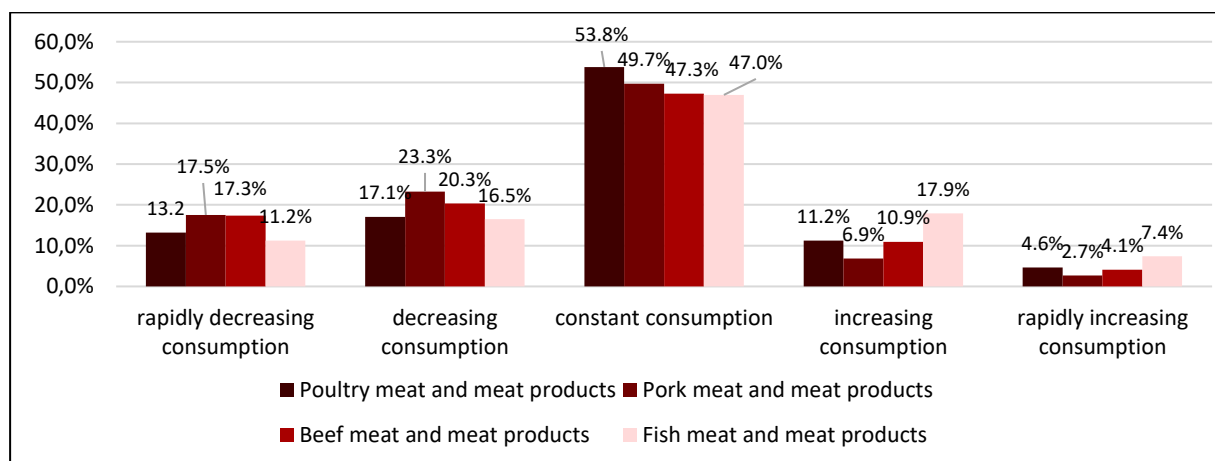
view to the future, easy digestibility, food scandals and epidemics that are recorded for other types of meat. The increasing consumption is also attributed to the rapid preparation of this type of meat, which was justified during the COVID-19 pandemic, when Slovak consumers mostly ate at home, where they prepared their own food.

Pork is to be consumed to a lesser extent in 40.8% of consumers and only 9.6% of consumers surveyed expect an increase in consumption. This expected development may be influenced mainly by swine disease, which will have a negative impact on the supply of pork and its prices. Beef will be consumed to a lesser extent by 37.6% of consumers, which may be mainly due to the supply of imported meat, but on the other hand, consumption is expected to increase in 15% of respondents who are beginning to realize the positive health effects of eating selected meat.

The last type monitored was fish meat and meat products, the consumption of which will be limited for up to 27.7% of consumers, mainly due to the high price compared to disposable income, but up to 25.3% of respondents expect an increase in fish consumption, which may be due mainly to favorable effects on human health and the constant recommendations of nutritionists on the importance of consumption (Figure 1).

With a view to the future, the decline in meat consumption may be caused mainly by the vegan trend, the evolving debates on climate change, health aspects, dietary preferences or moral reasons (Kráľ, 2019).

*Figure 1: Future consumption of meat and meat products from the point of view of Slovak consumers*



Source: own consumer survey, 2019-2020

In connection with the expected changes in meat consumption, we were interested in dependence between future consumption and selected demographic characteristics (Table 1). Based on the results of the Mann-Whitney U test and the Kruskal-Wallis test, the following facts can be stated. The future amount of beef consumption has been assessed differently by consumers depending on the age category, as most of the generation of older consumers do not plan to change the amount of beef. In the case of other meat species, differences in assessment between age groups were not identified. On the issue of the demographic group of gender, differences were recorded in the assessment of future consumption of pork and

beef, as men anticipate increasing consumption of these types of meat on a larger scale compared to women. It follows that there is no statistically significant difference in the assessment of future consumption of poultry and fish. Another characteristic examined in relation to future consumption was the income of the household. The results showed that people from higher-income households will tend to increase their consumption of fish. From the point of view of education, the number of household members and the economic status of Slovak consumers, no differences were identified in the assessment of future consumption in the case of individual types of meat and meat products.

*Table 1: Results of the Kruskal-Wallis test and the Mann-Whitney test to test the dependence between the future meat consumption by demographic characteristics*

	Kruskal - Wallis test	p-value
<b>Future meat consumption and age</b>		
Poultry	0.102	0.950
Pork	2.446	0.294
Beef	7.056	0.029
Fish	1.139	0.566
<b>Future meat consumption and education</b>		
Poultry	2.694	0.260
Pork	1.392	0.499
Beef	0.719	0.698
Fish	0.905	0.636
<b>Future meat consumption and monthly income</b>		
Poultry	4.187	0.242
Pork	5.312	0.150
Beef	5.024	0.170
Fish	9.395	0.024
<b>Future meat consumption and economic status</b>		
Poultry	1.321	0.517
Pork	0.661	0.718
Beef	3.109	0.211
Fish	4.231	0.121
<b>Future meat consumption and number of members</b>		
Poultry	2.587	0.763
Pork	7.114	0.212
Beef	5.006	0.415
Fish	1.468	0.917
	<b>Mann-Whitney test</b>	<b>p-value</b>
<b>Future meat consumption and gender</b>		
Poultry	159751.500	0.493
Pork	146698.000	0.002
Beef	143846.000	0.000
Fish	161383.500	0.708
<b>Future meat consumption and residence</b>		
Poultry	151077.000	0.003
Pork	146380.500	0.000
Beef	159331.500	0.161
Fish	164550.000	0.646

Source: own processing

Trends in meat consumption with a view to the future may be influenced by several factors. We identified the above based on 12 selected factors, which were evaluated by Slovak consumers on a scale from 1 to 10, with 1 represents the least important factor and 10 represents the most important factor. In the evaluated factors, we identified hidden relationships between the examined factors. Based on the achieved results and the application of categorical analysis of the main components (CATPCA), there were created two latent components determining the future meat consumption (Table 2). This confirms our assumption of the existence of differences in the assessment of factors determining the future meat consumption.

The first component consists of factors including the consumption of plant-based meat substitutes, claims of harmful meat consumption, a tendency to vegetarianism, the consumption of hybrid meat, the insufficient supply of meat on the market, the consumption of cultured meat and insects. These factors can be considered key in eliminating meat consumption, so we have named this group of factors as "a factor limiting future meat consumption".

The second component is composed of factors, which include meat adulteration, composition, animal diseases, animal welfare and food scandals. These aspects are important for Slovak consumers when deciding on the purchase and consumption of meat and meat products in the future. For this reason, the component can be described as a "factor significantly influencing meat consumption in the future ". It is likely that consumers will pay increased attention to this factor, which may be reflected in the purchase of smaller quantities of meat and meat products, but on the other hand consumers will place an emphasis on origin and prefer Slovak meat offered at higher prices.

*Table 2: Factor loadings from Categorical Principal Component Analysis (CATPCA) - Factors determining the future meat and meat products consumption*

Consumed meat substitutes	1. Component	2. Component
meat composition	0.056	0.854
meat adulteration	0.063	0.913
poor animal welfare	0.238	0.822
livestock diseases	0.146	0.881
vegetarianism, veganism	0.772	0.034
insufficient supply of meat	0.722	0.197
claims that meat is harmful	0.851	0.027
plant-based meat substitutes	0.849	0.027
cultured meat	0.598	0.479
hybrid meat products	0.611	0.490
edible insects	0.604	0.429

Source: own processing

As there is a high presumption of orientation towards the consumption of meat analogues, the consumer survey was also focused on the issue of consumption of meat substitutes. The results show that more than 60% of consumers have ever consumed soy and tofu. Meat analogues based on vegetable proteins, such as tempeh, seitan, robi, quorn, klasso, šmakoun were consumed to a much lesser extent. An interesting finding was the fact that 5.1% of consumers involved in the consumer survey consumed insects and 2.1% of consumers

consumed hybrid meat products (Table 3). Meat analogues were and are consumed by Slovak consumers mainly due to taste (20.2%), health aspect (13.8%), or lifestyle (13.3%). It can be stated that a certain group of Slovak consumers prefer meat substitutes due to health diseases related mainly to health problems resulting from the consumption of classic meat, as well as their own belief not to consume meat and focus on vegetarian and vegan food. It is also important to note that 24.0% of consumers have never consumed any meat analogues, which means that Slovak consumers appear to be conservative and a nation with a strong meat culture.

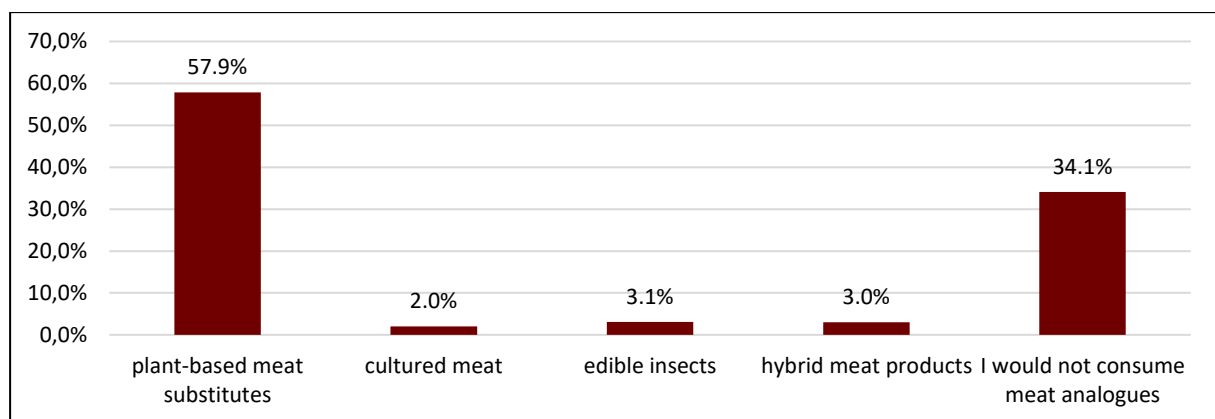
*Table 3: Consumed meat substitutes from the point of view of Slovak consumers*

Consumed meat substitutes	%	Consumed meat substitutes	%
tofu	64.9%	klaso	4.0%
soy	65.8%	robi	3.4%
tempeh	9.6%	hybrid meat products	2.1%
šmakoun	5.8%	quorn	1.7%
seitan	5.7%	I have never consumed meat substitutes, but I know them	7.5%
edible insects	5.1%	I have never consumed or recognized meat substitutes	16.5%

Source: own consumer survey, 2019-2020

As the results of the studies show, it is undeniable that population growth will continue in the coming years and it will not be possible to ensure the livelihood of the population with meat and meat products as at present. In the context of the above, the survey was also focused on the question of which of the meat analogues Slovak consumers would prefer. The results show that 34.1% of consumers would not consume meat substitutes, 57.9% of consumers would start to consume plant-based meat substitutes and 8.1% of consumers would start to focus on hybrid meat products, edible insects or cultured meat (Figure 2).

*Figure 2: Consumption of meat analogues in the future from the point of view of Slovak consumers*



Source: own consumer survey, 2018-2019

In connection with our survey, it is necessary to highlight the results of the survey by Grac et al. (2015), who found that respondents grouped into three key groups: people with a strong relationship to meat and a reluctance to change behavior, consumers who have no strong relationship to meat consumption and are willing to change their eating habits, and those who show strong disgust from meat and tend to vegetarian and vegan. As a real solution for all

these groups, according to Gokirmakli and Bayram (2017) appear cultured meat, but its future depends on the consumer's opinion of the product (Goodwin & Shoulders, 2013). The change in lifestyle and the influence of vegetarianism and the focus on plant-based meat substitutes are also given (Joshi & Kumar, 2016). Last but not least, in a study conducted by Kauppi, Pettersen and Boks (2019) state that edible insects are the food of the future, considering the environmental and health aspects. However, this meat analogue is difficult to accept by consumers in Western countries, and it is therefore necessary to point out factors and develop measures to support insect consumption (Kauppi et al, 2019). The acceptability of meat substitutes was also examined in a study carried out by Welnrich (2018) and it was found that consumers like the taste of meat and their eating habits are very strong. On the other hand, consumers are worried about the consumption of meat substitutes, and the aim is the consumption of meat analogue at least once or twice a week. In the context of the above, we consider it necessary for business enterprises to start focusing on the development of innovative meat analogues and to communicate novel foods to consumers. We think that these meat analogues may be an opportunity for businesses in the food industry that have run into existential problems during a pandemic situation caused by COVID-19.

## 5. Conclusion

The pandemic situation associated with COVID-19 has made us think about what way of life we live, what our lifestyle is and how we eat. In the context of a pandemic disease, each consumer should eat rationally and appropriately include more than one food group. The last year has also allowed us to think about the climatic conditions in which we live and we should think about the future and think about future generations of consumers. Our food consumption should also consider the impact on the environment and sustainability. Based on the above, a paper was orientated on the future of meat consumption in the Slovak Republic. We have concluded that it is necessary to eliminate the consumption of meat and meat products and to consider another, alternative, diet. Looking to the future, it can be stated that approximately half of Slovak consumers do not plan to change their meat consumption. The younger generation of consumers up to 25 years, plans to reduce their consumption of pork and strengthen their consumption of fish and beef, which has highly positive health effects. We have identified factors significantly influencing the amount of meat consumption in the future, which may include the existence of food scandals, meat adulteration, poor animal welfare, and various animal diseases. On the other hand, we have also defined the factors limiting meat consumption and it is mainly a change in lifestyle, a tendency to vegetarianism and veganism, or the existence of various analogies of meat. Meat analogues are an alternative to traditional meat with a perspective for the future. At present, most Slovak consumers cannot imagine regular consumption of plant-based meat substitutes, cultured meat or edible insects. On the other hand, as the most suitable and acceptable alternative appear to be foods of plant origin, resp. vegetable proteins. We appeal to the professional and lay public and it is necessary to address the issues of future consumption of meat and meat products and with regard to sustainability and environmental protection, we propose that Slovak consumers gradually begin to develop eating habits towards meat analogues. However, we are convinced that products of animal origin should not be excluded from our diet, as they have an irreplaceable place in the nutrition of the population, but we should eliminate their consumption with the idea of future generations of consumers.

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## **The Impact of Cross-Cultural Dynamics on the Effectiveness of Change Management Processes**

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### **Abstract**

This paper aims to provide a brief review of cultural concepts and change management, followed by an analysis of the impact of Hofstede's cultural dimensions on the effectiveness of change management processes. A focus is set on the dimensions of individualism and uncertainty avoidance, which influences different change management drivers for example change leadership, aligned direction, work roles, resources, emotional energy and turbulences. Future implications and limitations of this study are also discussed since culture is a very complex phenomenon and change management has multiple dimensions and variables to consider. This paper concludes with recommendations for further investigations. Nowadays, organizations face an increasing number of changes due to challenging economic, technological and social uncertainties. Since a large proportion of change measures still do not achieve the desired goals, it is important to make them more effective in order to keep companies competitive in the long term. The results of this literature review show that cross-cultural dynamics influence change management initiatives and key drivers. This can provide a useful new perspective for both change managers and consultants.

### **Keywords**

National culture, cultural dimensions, change management, organizational change

## 1. Introduction

“Change is the law of life. And those who look only to the past or present are certain to miss the future“, said John F. Kennedy back in 1963 (White House Audio Recordings, 1963, 07:17–07:26). Researchers nowadays have established the acronym VUCA to describe the volatility, uncertainty, complexity and ambiguity of today’s world due to major changes such as digitalization, globalization, changing customer needs and external influences (Berinato, 2014) like Covid-19. This VUCA environment requires companies to adopt change management as an organizational competence to set a competitive advantage and remain economically viable in the long term (Goksoy, 2015). Key factors for effective change management and fast adaptability are clear goals, transparent communication, considering the needs of staff and communicating the vision of change (Landes & Steiner, 2014). However, still 70 percent of change programs fail mostly because of human factors such as a lack of management support and employee resistance (Ewenstein, Smith & Sologar, 2015).

Different frameworks and theories describe organization change including the types, stages and management of change and employees’ reactions. Most approaches have been developed in low power and highly individualistic cultures like the United States (Kirsch, Chelliah & Parry, 2012). This raises the question of cross-cultural transferability and applicability of change management methods and interventions. The research gap can be seen in the extent to which national culture influences the execution and effectiveness of change management processes especially considering human interactions. Investigation in cross-cultural studies and change management can help to critically explore the impact of society’s culture on change management strategies.

The first part of this paper will give an overview of the existing literature in the fields of culture and change management giving definitions, historical development and existing frameworks. Afterwards, possible impacts of Hofstede’s cultural dimensions (Hofstede, 1980, 2001) on change management drivers are determined. Finally, these findings are critically examined and recommendations for further procedures are presented.

## 2. Literature Review

### 2.1. Defining the nature of culture

Culture is a complex and multi-dimensional phenomenon, which has been addressed in various models. Over the last decades, the perception of culture has changed and there are still ongoing discussions about the definition of culture. Until the beginning of the 20th century, culture was only used in two different contexts: (1) to describe what qualities are desirable in "cultured people" and thus classify society (2) to show that the world contains numerous cultures, each with its own value (Williams, 1958). This prevailing view implicated that physiological differences in race were important in determining behavior (Shaules, 2007). This racial determinism was seen to justify industrial development through genetic superiority. It was not until the 20<sup>th</sup> century that anthropologists and sociologists established the understanding that our behavior is determined by a person's social and cultural environment (Durkheim, 1982; Weber, 1978; Mead, 1961). Culture thus became a common

value view of a group of people. Table 1 shows some definitions which formed the understanding of culture.

*Table 1: Various definitions of culture in history*

<b>Definition of culture</b>	<b>Source</b>
"Culture or civilization...includes knowledge, belief, art, moral, law, custom, and any other capabilities and habits acquired by man as a member of society."	Taylor (1871, p. 1)
"Culture is a well-organized unity divided into two fundamental aspects—a body of artifacts and a system of customs."	Malinowski's (1931, p. 623)
Culture "is the total shared, learned behavior of a society or a subgroup."	Mead (1953, p. 22)
Culture is a "widely distributed, lasting mental and public representations inhabiting a given social group"	Sperber (1996, p. 33)
Culture is an "information capable of affecting individuals' behavior that they acquire from other members of their species through teaching, imitation, and other forms of social transmission."	Richerson & Boyd (2005, p. 5)
Culture is "the collective programming of the mind that distinguishes the members of one group or category of people from others"	Hofstede, Hofstede & Minkov (2010, p. 344)

Note. Author's own work

Overall, most definitions explain that culture occurs within a group of people with shared patterns which are learned and not naturally given by birth. Furthermore, there is a distinction between objective culture, which represents tangible products representing the accomplishments of a group of people like literature, food and costumes, and subjective cultures including behavior, values and belief of societies (Shaules. 2007).

Two different perspectives on culture are present in social studies due to its complex nature. The first one is called anti-essentialists, which consider culture as complex, heterogeneous and social construct (Holliday, 1999). Holliday (1999) describes culture as a process of a group towards a common understanding under various circumstances. It appears whenever a group is related by the same perceptible set of values, expectations, understandings and behavior. The personal cultural realities can be related to different cultural entities for example demographic, socio-economic and geographic factors (Holliday, 2010). This heuristic model is thus "the sum total of all the processes, happenings, or activities in which a given set or several, sets of people habitually engage" (Holliday, 1999, p. 248). Furthermore, it implies that people have a set of skills to handle problems and are not only passive to their environment. The second view is called essentialists, which pictures culture as a "causal agent" (Shaules, 2007, p. 33), that can influence people's behavior and actions. Culture is conceptualized as a concrete and bounding phenomenon that is homogeneous within a country or ethnic group (Holliday, 2000). Hofstede as a famous representative of this concept uses the generalization of national cultures as a guide to interpret and measure behavior (Hofstede, 1980, 2001). Based on his studies in 40 countries and surveys with 100,000 individuals he developed the five dimensions of national culture – power distance, uncertainty avoidance, individualism, masculinity and long-term orientation. A list of famous cultural dimensions is shown in figure 1.

Figure 1: Cultural dimension approach of several researchers



Note. Author's own work

This paper focuses in particular on Hofstede's cultural dimensions due to the availability of detailed country-specific and the continuing relevance of his model in the literature. The main focus will be set on the two cultural dimensions of individualism and uncertainty avoidance.

## 2.2. Change management definition and models

The introduction chapter argued that turbulent, challenging and dynamic business environments have led to the need for companies to effectively deal with change. Experts have developed various definitions of organizational change, but most of them insist on two basic elements: (1) A process in which an organization changes its existing patterns including working methods, aims, culture, underlying technologies, infrastructure, internal processes, existing structure, work routines and strategies (2) in order to move from the company's current situation to a more effective state (Brightman & Moran, 2001; Cummings & Worley, 2005; Herold, Fedor, Caldwell & Liu, 2008; Stobierski, 2020).

The sheer volume of change literature makes it increasingly difficult for corporate managers to find the right model for individual company needs. Furthermore, the generated knowledge in this area is still rather fragmented because diverse insights are not unified in one single, verified theoretical framework towards the explanation and prediction of successful organizational change (Montalvo, 2006).

To gain a more comprehensive and holistic understanding of change this paper will first look closer at the different triggers for change. This includes the two dimensions of the internal

context and external environment of organizations (Jacobs, Van Witteloostuijn & Christe-Zeyse, 2013). Internal factors can be a change in corporate leadership, mergers, acquisitions, a decline in performance and low employees' motivations. On the other hand, external conditions like changing governmental regulations, economic developments, rising competition and new technologies can cause problems for an organization. Researchers state that the external environment and the internal dynamics of organizations co-determine the choice and success of managerial practices (Jacobs et al., 2013).

Change can be characterized by several dimensions. Greenwood and Hinings (1996) developed two dimensions, which are still used today: (1) The scope dimension involves either a convergent/incremental change in an ancillary activity of the business or a radical change that affects the core activity of the business. (2) The pace dimension describes, on the one hand, revolutionary or episodic change, which is irregular and discontinuous, and, on the other hand, evolutionary or continuous change, which represents small adjustments as an ongoing and evolving process (Weick & Quinn, 1999). The rate of change nowadays is greater than ever before, so change management is often seen as a permanent aspect of organizations to improve their competitiveness, profits and productivity (Lucey, 2008). Another dimension that is often mentioned in change management literature is the level of planning, which can be planned or emergent. For the past 50 years, the view of planned change has dominated the theory and practice of organizational change especially based on the studies of Kurt Lewin (Bamford & Forrester, 2003). This approach views change as steps towards a goal that can be planned and analyzed (Lewin, 1951). However, some researchers soon criticized this approach, especially due to the turbulent and unstable business environment (Garvin, 1993). For this reason, the emergent change was established which describes change as unpredictable and chaotic due to unforeseeable environmental influences.

Various researches developed different change management practices and processes. Kirsch et al. (2010) identified six critical drivers which moderate the impact of change on performance:

- (1) *Turbulence*: A change process involves risks that have to be overcome, such as resistance to change. There are also basic influencing factors such as the amount of change and the speed of change.
- (2) *Resources*: The abilities, skills and capabilities of teams are important to determine how employees may cope with the changes and their associated tasks. In addition, systems, processes and training need to be put in place to enable staff to achieve their objectives.
- (3) *Aligned direction*: A vision expresses the desired goal of change which should be realistic to employees and easy to communicate for managers. In addition to an encouraging vision, clear objectives must be defined per target group so that each employee sees his or her individual contribution and role in the change process. Not only is the creation of the vision important, but also the way it is communicated. All messages associated with the vision should clearly relate to the change recipients' interests and concerns. Open and transparent communication can reduce resistance to change and increase commitment to change.
- (4) *Change Leadership*: Leadership is of great importance in times of change. They have to act as role models and create commitment towards the change process. Therefore, trust in leadership is an important issue for effective and sustainable change.

- (5) *Work roles*: This dimension investigates the level of participation and involvement in planning and implementing change. Furthermore, clear roles, rules and measurable targets can help to establish clarity about the goal of the change process.
- (6) *Emotional energy*: Change can trigger different emotional reactions which can reach from anxiety and fear to passion and drive for change.

All of these drivers can either foster or inhibit change management processes and thus impact effectiveness and performance. This brief introduction to these six drivers for change management will help later on allocate the influence of the cultural dimensions on change management.

### **2.3. Cross-cultural influence on change management**

The following chapter will take a closer look at two cultural dimensions created by Hofstede – individualism versus collectivism and the level of uncertainty avoidance. By comparing associated behavior and mindsets of the variations of these cultural dimensions with existing change management knowledge and Kirsch et al.'s (2010) critical drivers, possible influencing factors can be uncovered.

#### *2.3.1. Individualism versus collectivism*

The individualism dimension pictures the degree of people's interference with society and thereupon the influence on people's self-concept (Hofstede et al., 2010). It describes the extent to which people sacrifice their own needs and goals for the benefit of society or a group. In collectivist cultures, people prefer to maintain harmony and avoid confrontation (Hofstede, 2001). Values such as loyalty, cohesion and devotion are appreciated. In addition, collectivist cultures often use high-context communication, where implicit and less direct verbal information is exchanged - especially facial expressions and body language are noticed (Hall, 1976; Hofstede, 2001). Another aspect of collectivism is the great importance of status, rank and hierarchy (Hofstede, 1980). Examples of such cultures are Southeast Asian and Central American (Hofstede, 2019). By contrast, in individualistic cultures people prefer to focus on themselves or their family (Hofstede, 2001). They like to speak their mind and use explicit communication often related to low-context culture. Examples of individualistic cultures are the United States of America and Australia (Hofstede, 2019).

Effective and sustainable change management should enable the people involved to quickly and positively adapt to change (Carter, 2008). In this context, studies found that employee's identification and commitment with the company has a positive impact on the outcome of change management processes (Riketta, 2005; Aitken & Von Treuer, 2020). Looking back at national cultures, McBreen, Tosto, Dignum and Hofstede (2011) showed that especially in cultures with a low individualism index, the conformity and sense of belonging to a group is very strong. They adapt quickly to their surroundings and often take a back seat for the good of the group. Overall, these findings may indicate that in collectivist cultures, commitment to change can be created more quickly among employees.

To date, a number of authors have considered the effects of leadership on successful organizational change (Tourish, 2019; Amiri, Rahim & Ahmed, 2020; Almeida & Simoes, 2021; Slemp, Lee & Mossman, 2021). Recommended leadership characteristics such as being a role model, creating motivation, setting a clear vision and transparent communication are frequently mentioned (Aitken & Treuer, 2020). In addition, the literature highlights the important role of the relationship between employees and managers (Reed & McDermott, 2020). Trust and confidence in the leadership correlate positively with effective change management (Landes & Steiner, 2014). For example, Raffery and Simons (2006) found a positive correlation between openness for change and trust in leadership. Some cross-cultural studies suggest an association between highly individualistic cultures and a lack of trust and confidence in colleagues and supervisors (Costigan et al., 2007; Hofstede et al., 2010), which might have negative effects on the effectiveness of change management processes.

Another aspect of leadership that influences change processes is sharing a common vision by communicating clear commitment to the purpose of change (Landes & Steiner, 2014; Ten Have, Ten Have, Huijsmans & Otto, 2018). Aitken and Treuer (2020) explain, in their developed leadership competency framework, the importance of a shared understanding and agreement of the vision to successfully implement change in an organization and raise motivation and involvement. Collectivist cultures often spend a lot of time collaborating, voting and discussing visions and ideas to give employees a chance to participate in important decisions. An example is the "ringi" system in Japan, where ideas and suggestions are first disseminated throughout the organization to get feedback from employees before changes are officially communicated (Hofstede, 2001; Hofstede et al., 2010). This implies that employees in a collectivist culture might have a better understanding of the overall vision and a sense of ownership to corporate initiatives, which fosters successful change.

Looking closer at change management interventions, some studies argue that effective teamwork is an important factor for organizational change. For example, Beer, Eisenstat and Spector (1990) found, in their six-step change management model, that establishing teams working on specific concepts and issues such as the strategic direction can help to create more effective change management processes. Furthermore, new project teams might be implemented during the change in order to establish new structure, systems and procedures. Cummings and Blumberg (1987) argued that highly individualistic cultures focus mostly on individual performance and have a lower need for social interaction. Therefore, they suggested, that individualistic cultures are less suited for the implementation of teamwork. Furthermore, Kirsch et al. (2010) found, that especially collaborative change is better accepted in collectivistic cultures. These studies indicate that there is a relationship between national culture and the preferred ways to work. In addition, it could be expected that teams within collectivist cultures have more effective collaboration processes, which can foster change processes.

Resistance to change is a worldwide phenomenon, which is increasingly discussed by change management studies (Borges & Quintas, 2020; Landes & Steiner, 2014). Reasons often given for resistance are fear of the unknown or retention of habits (Krügel & Traub, 2018). A transparent and timely flow of information and clear communication is important to reduce staff resistance (Tran, Pham & Bui, 2020). This aspect might be linked to high- and low-context cultures - people in different cultures might prefer different types of communication. Cross-

cultural research has highlighted a link between cultural factors and information seeking (Huang & Chang, 2009; Gaston, Dorner; & Johnstone, 2015; Khosrowjerdi, Sundqvist & Byström, 2019). For example, Hsu and Chang (2014) discovered that interpersonal trust has a positive effect and uncertainty expectations a negative effect on information sharing in Taiwan telecommunications companies. Furthermore, Wang, Su and Yang (2011) illustrate that collectivism has a positive effect on knowledge production and high individualism has a negative effect. Collectivist cultures get more information through direct interactions such as conversations with superiors or rumors, while individualist cultures prefer more written information (Kirsch et al., 2010). Together, these findings indicate that individuals in different national cultures disseminate information differently, need different amounts of information, and prefer information through different sources.

Focusing on the reasons for change in companies, a frequently considered phenomenon is digitization and trying to establish effective innovation management. Concepts that are increasingly emphasized are agility, flexibility, and creativity in relation to successful change, which is a critical factor for organizational development and financial performance (Holbeche, 2019; Le Grand & Deneckere, 2019; Rubino, Vitolla, Raimo & Garcia-Sanchez, 2020). Studies show that national culture is an important variable to consider in a digital transformation project (Asanuma, 2013; Kollmann & Christofor, 2014). For example, Pan, Chen, and Ning (2018) showed that national culture plays an important role in the perception and adoption of new technologies. The characteristics of an individualistic culture, such as high value placed on personal opinion and independent decision-making, lead to the faster generation of new and creative ideas (Erez & Nouri, 2010), rewarding of entrepreneurial behavior (Bradley, Gao & Sousa, 2013), faster innovation diffusion (He & Lee, 2020), and more innovation advocacy (Desmarchelier & Fang, 2016). In support of these findings, Rinne, Steel, and Fairweather (2012) found a positive correlation between individualism and innovation scores in organizations. All of these studies reviewed implies that individualism might foster organizational change in relation to innovation and new technologies.

### *2.3.2. Uncertainty avoidance*

The dimension of uncertainty avoidance deals with the fact that the future is unknown and to which degree this causes anxiety among different cultures (Jandt, 2007; Hofstede, 2001). Some societies, for example France, feel threatened and uncomfortable by ambiguity and try to alleviate the uncertainty by leaning on social norms, rules and bureaucratic regulations (House, Hanges, Javidan, Dorfman & Gupta, 2004). These structures should protect them from unforeseeable events, which could have a negative impact and high risks (Congden, Alexei & Desplaces, 2009). On the other hand, cultures with a low level of uncertainty avoidance adapt faster to unpredictable situations, are more flexible and are more likely to accept dissent (Tian, Deng, Zhang & Salmador, 2018). Members of a culture with high uncertainty tolerance try more often to think outside the box and are more likely to break daily routines and take risks (Tavanti, 2012).

Low uncertainty avoidance cultures tend to have a more flexible mindset, readiness for change and encouragement of innovative solutions (Laznjak, 2011). This might help to adapt quicker and more effectively to unexpected change factors and critical situations. Some studies

argue that uncertainty avoidance influences an organizational propensity to try new things and take risks, which can foster or inhibit innovation (Luczak, Mohan-Neill & Hills, 2014; Minbaeva, Rabbiosi & Stahl, 2018). Therefore, it could be argued, that a low level of uncertainty avoidance fosters innovation and thus makes change management more effective.

However, cultures with a low level of uncertainty avoidance have negative traits such as acting very spontaneously instead of planned and proactive towards change. Fietz, Hillmann and Guenther (2021) state that these cultures are mostly influenced by external circumstances in terms of change and do not try to shape their organizational environment to improve conditions. This study showed that with a higher score of uncertainty avoidance, organizational resilience increases. This can be explained with the behavior to prepare for numerous situations, outcomes and events and develop comprehensive guidelines to cope with them. Furthermore, countries with a high level of uncertainty avoidance are careful to monitor and scan the environment to avoid unexpected events. In this way, these cultures develop a high awareness capacity to act proactively as an organization and to actively shape the business environment (McCann & Selsky, 2012) for example with the help of a company-wide risk management, staff training for crisis response and long-term company visions with guidelines (Starr, Newfrock & Delurey, 2003; Borekci, Rofcanin & Sahin, 2014). These findings give a hint that higher uncertainty avoidance increases organizational reliance.

As already discussed, resistance to change can be detected worldwide in all organizations. However, a characteristic of high uncertainty avoidance culture is the emotion of stress and anxiety towards unpredictable events or actions with unknown outcome (House et al, 2004). This feeling and behavior of coping with uncertain situations can be a cultural trait of a society which is transferred to organizational management. This shared mental programming can also be traced back to Emily Durkheim, a famous French sociologist, who explored the different levels of anxiety within different cultures (Hofstede et al., 2010). This idea was taken further by Lynn, who developed an anxiety score in different countries, which has a strong correlation with Hofstede's uncertainty index and ranking (Hofstede et al., 2010). Change in organizations is often connected with uncertainties and unpredictable outcomes, thus it causes stress for employees. It is the task of the leadership to manage the stress that comes with restructuring processes, so it doesn't cross the employee's tolerance level. An extreme negative example was the restructuring of France telecom in 2009, where twenty-four employees killed themselves in a period of eight months (Hofstede et al., 2010). The international press reported about these suicides blaming the management to care little about employees concerns during change processes. Considering all of this evidence, it seems like resistance to change and anxiety might be higher in countries with higher uncertainty avoidance which might affect the pace of change and outcome (Kirsch et al., 2010).

Practical implications of how to manage resistance to change were introduced by Kirsch et al. (2010). They argued that cultures with a high level of high uncertainty avoidance need a low pace of change at the earlier stages of change because this is connected to fewer turbulences and therefore reduces stress. Another aspect is the amount of change taking place. A greater amount of change could cause more uncertainty and therefore more resistance to change when it comes to higher levels of uncertainty avoidance. However, it can be argued that this correlation only takes place in change processes which could result in personal risks (Kirsch et

al., 2010). Examples are reduction in labor, new ways of working and restructuring. Therefore, the amount of change needs to be analyzed in which way it affects employees and has thereby adapted to the capability of them. Furthermore, the leadership should create transparent rules, detailed processes and role clarity with clear responsibilities to address employee's needs (Kirsch et al., 2010). Especially the need for rules and planned processes are connected to the strong emotional demand for formal structures in high uncertainty avoidance cultures.

### 3. Discussion

The analysis of previous literature in the two fields of change management and cultural research shows possible influencing factors. For example, the cultural dimensions of individualism and collectivism and the associated behavioral patterns have a possible influence on the following aspects of change management:

- Change leadership: Commitment for change and trust in leadership
- Aligned direction: Understanding of the overall vision of change and need for communication
- Work roles: Collaborative change and teamwork
- Resources: Organizational innovation

A closer look at the cultural dimension "uncertainty avoidance" also revealed possible overlaps between behavioral norms and positive factors influencing change processes:

- Resources: Organizational innovation and organizational reliance
- Turbulence: Pace and amount of change
- Emotional energy: The feeling of anxiety
- Work roles: Need of rules and planned processes

Determining the influence of culture on behavior is difficult, as culture is a complex and broad construct that is difficult to measure accurately. Looking at the cultural-dimensional approach strengths and limitations of this approach can be observed. The essentialists found a way to make culture measurable and provided a way to compare them (Holliday, 2000). The approach that culture determines behavior, makes it easier for people to capture and tangle it (Lewis, 2006). However, cultures get reduced on the national aspect and overgeneralize all the complexity within (Holliday, 1999). Moreover, if society is described as homogeneous, stereotypes are formed quickly. Jandt (2001) identified three ways in which stereotypes can harm and burden intercultural processes: (1) assumptions might not always be true, (2) prejudice causes us to overlook individuals and (3) negative stereotypes could be used to interpret the behavior of people. Looking at the data generated from Hofstede to derive his cultural dimensions, it can be seen that even the total sample size of 100,000 individuals seems impressive, in some countries only a few people participated in the study. This implies, that the data and the interpretation of them might not always be reliable and valid. Furthermore, the interpretation of the data is influenced by the Western view of binary oppositions, where one side is the truth and fully present, whereas the other side is negative (Ferri, 2016). The dichotomization of the cultural dimensions enhances the thinking of an idealized self and negatively imagined other (Holliday, 2010). However, especially Hofstede's cultural dimensions are used in several cross-cultural fields like international business management, intercultural communication, cross-cultural sociology and psychology. In

addition, several researchers have verified the findings of Hofstede and are still using his framework nowadays (Van Oudenhoven, 2001; Huynh, 2020; Olowookere, Agoha, Omonijo, Odukoya & Elegbeleye, 2021; Xu & Hao, 2021; Uzuegbunam & Geringer, 2021).

Organizational change is a complex undertaking that is related to many different characteristics. Pettigrew (2001) suggested considering context, content, process and outcome when analyzing change. The critical drivers for successful change management presented by Kirsch et al. (2010) can be of different importance depending on the company's situation and can therefore be perceived differently. Several variables that were not considered in this study can influence change management additionally. For example, Achim, Borlea, and Vaidean (2019) show with their research that the economic development of a country affects the relationship between innovativeness/entrepreneurship and culture. Their findings show, that "cultural patterns such as individualism, femininity, low uncertainty avoidance, short-term orientation or restrain may stimulate entrepreneurship in high-income countries but may be very dysfunctional in low-income countries" (Achim et al., 2019, p. 1). In addition, the culture within a company can also have an impact on change management and employees' perspectives on change. Omazic, Mihanovic and Sopta (2020) analyzed the difference between an ideal organizational culture for successful change and existing cultures and found significant effects of deviation from the "ideal" culture on desired strategic achievements.

These are several potential limitations of the findings obtained by the literature review since some results were only possible conclusions and are not statistically tested. In a further step, primary investigations can help to verify the identified findings and may help to identify further important variables. Kirsch et al. (2010, p. 190) propose: "What is needed is a contingency model that takes into account cultural contingencies which determine the cross-cultural transferability of specific management approaches or concepts." This allows to derive practical implications for cross-cultural change measures and possibly adapt existing measures and models to cultural conditions.

#### **4. Conclusion**

The current study presented and analyzed possible impacts of Hofstede's cultural dimensions on the effectiveness of change management processes. At the beginning, this paper summarized experts' perspectives and models on both national culture and change management. Using this expertise, potential effects of individualist and collectivist cultures as well as cultures with different levels of uncertainty avoidance were considered in relation to critical drivers for the success of change management. The literature review suggests that differences in change leadership, aligned direction, work roles, resources, turbulences and emotional energy as for example anxiety, may be influenced by cultural dimensions. These identified change management drivers are critical for its success and planned performance. Therefore, national culture has a possible impact on the effectiveness of change management initiatives. However, multiple other variables like industry, economic development, organizational culture interact with possible findings. The results need to be further investigated and verified with primary investigations. Since executives believe that only one of three planned change processes and interventions can reach their desired goals (Jarrel,

2017) considering national culture as a possible influence is important. This paper and further investigations will be especially helpful for managers and consultants in order to improve change management processes.

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## The Women Solo Traveler: A Study About Empowerment and Self

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### **Abstract**

Solo consumption or individual consumption reflects a society in transition, where consuming alone gains new meanings. Tourism, a consumption practice linked with various social and cultural meanings, stands out in the dynamics of individual consumption. And women who travel alone gain relevance, not only for the growing niche market they represent but also because it is related to self-expression, identity, and conquest of freedom and independence. The main objective of this study is to understand how the relationship between the act of women travelling alone and their self-expression occurs. Through a qualitative approach, we interviewed twelve women who travel alone with the support of a semi-structured script. We analyzed data using interpretative content analysis. Results reveal that the consumption of solo trips is a driver of the self-empowerment process. Furthermore, we identified four moments that drive the affirmation of the empowered self. They are:

1. The decision-making process of the first solo trip.
2. Mapping existing risks and searching for tools that reduce this risk.
3. The journey and the awakening of the pains and pleasures of being alone.
4. The return to everyday life: the effect of the freedom experienced and the consolidation of solo travel as a habit of consumption and lifestyle.

These four moments symbolize breaking points in the life of solo travelers women analyzed and walk through them proved fundamental for the transformation and affirmation of the empowered. Therefore, solo travel has become an essential part of the lifestyle and expression of women self-empowerment.

### **Keywords**

Tourism, solo traveler, women, empowerment

## The Value of Millennial Employees in the South African Banking Sector

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### **Abstract**

**Purpose** – This paper explores the value of millennial employees within the South African banking sector.

**Design/methodology/approach** – A qualitative approach was employed in the study. Semi-structured face-to-face interviews were conducted with 12 senior managers from four major banks in South Africa. Qualitative content analysis was used to analyze data.

**Main Findings** – The findings indicate that millennials play a positive role in improving competitiveness, organizational performance and sustainability within the South African banking sector. Millennials' strengths include: they are technologically savvy, innovative, find creative solutions to problems, have an entrepreneurial mindset, adapt easily and quickly to change in their environment and are out-of-the-box thinkers.

**Research limitations/implications** – This research is limited to the Johannesburg area in South Africa. Further studies could be conducted which include other geographical areas.

**Practical/managerial implications** – managers in the South African banking sector should create a conducive, flexible and inclusive work environment which makes it easier for millennial employees to perform optimally.

**Originality/value** – This study contributes to the existing literature on the value of millennials within the South African banking sector.

### **Keywords**

Adaptable to change, entrepreneurial mindset, South African banking sector, South African millennials, technologically savvy

## 1. Introduction

Kane, Nanda, Phillips and Copulsky (2021) observe that “work as we know it is forever changed by COVID-19” (p. 12). Remote working and the use of technology in everyday work life has become the new normal. Similarly, as stated by Chopra and Bhilare (2020), the work environment and future workplace has changed significantly post COVID-19. Digitalization, technological disruption, artificial intelligence (AI), big data, data analytics and the development of robotics are reflective of a major shift by businesses towards embracing more technology in their business models in order to better reach and serve their customers (Chopra & Bhilare, 2020).

In order for companies to be successful, they need to have a thorough understanding of the capabilities, expertise and know-how of all their employees (Canedo, Graen, Grace & Johnson, 2017). Additionally, outdated business models that are rigid, inflexible and unresponsive to the changing and dynamic 21<sup>st</sup> century global economy and environment are no longer relevant. In a post COVID-19 pandemic world it is crucial for businesses and their employees to be technologically savvy, agile, flexible and to be able to embrace and adapt to change and technological advances rapidly. Therefore, employees in businesses need to be comfortable with using technology and, thus, embrace change quickly. In an increasingly competitive, interconnected and dynamic global business environment, businesses which are able to adapt to changes in both technology and the business environment will have an advantage over those that cannot (Bolser & Gosciej, 2015).

The global banking sector is characterized by intense competition, rivalry and constant change (Peng & Meyer, 2016). Moyo (2018, p. 3) explains that the South African banking sector is “well-developed and effectively regulated”. According to Mishi and Khumalo (2019), the South African banking sector is sophisticated and highly regarded for its efficiency in the global banking sector. Price Waterhouse Coopers (2020) likewise notes that “the major South African banks are highly regarded globally for their innovation and purpose-led, platform-based philosophies...” (p. 22).

Other characteristics of the South African banking sector are that it is highly regulated, competitive and concentrated (Simatele, 2015). Five large commercial banks hold the major share of the South African market (Simatele, 2015). They have the following number of customers in South Africa: Standard Bank – 11.8 million, Capitec – 9 million, ABSA – 8.65 million, First National Bank – 7.7 million and Nedbank – 7.4 million (Business Tech, 2017). A sizeable portion of assets in the South African banking sector is owned by these five banks (World Bank, 2017).

The banking sector in South Africa is very important to the country’s economy, (Moyo, 2018), national competitiveness and stakeholders such as customers, employees, government and civil society. Moreover, the banking sector in South Africa is part of the financial sector and, thus, a significant contributor of the country’s GDP (gross national product), a major employer in the country and a corporate tax-payer.

The 21<sup>st</sup> century workplace is diverse in terms of age, ethnicity, gender, culture, religion and different styles of work (Kapoor & Solomon, 2011). A key theme that underpins organizational

change is a dynamic and diverse workforce (Abbasi & Belhadjali, 2016). Haynes (2011) points out that there are four generations represented in today's workforce, namely: 1) the traditionalists or veterans who are the oldest generation and were born between 1922-1945; 2) Baby Boomers who were born from 1946 up to 1964; 3) Generation Xers who were born between 1965-1980 and 4) Millennials (Generation Y) who were born between 1981-2000. A generation can be defined as a group of people who share a particular age, year of birth, location and particular traits (Smith & Nichols, 2015). According to Sachs and Carroll (2018), by 2025, millennials will make up 75% of the entire global workforce. The focus of this study is on the millennial generation.

Vannevel (2016) observes that there is ample research on millennials at a global level. However, Pew Research Center (2015) states that there is a dearth of studies on millennials in the workplace in Africa. With regard to South Africa, the vast majority of research conducted on the banking sector has concentrated on competition within this sector (Moyo, 2018). There is scant research regarding the importance of millennials in the workplace within the South African banking sector. Currently, millennials make up approximately 36% of the total population in South Africa (Van DeVenter, 2020). The purpose of this paper is to provide a more comprehensive understanding of the value of millennial employees within the South African banking sector and, hence, contributes to the literature on millennials in this specific sphere. The research question posed by this study is: What is the value of millennial employees within the South African banking sector?

This paper is divided into five sections. Section 2 below provides a brief literature review of millennials' technological skills and their ability to adapt to change in the banking industry. In Section 3, the methodology of the study is described. Section 4 sets out and discusses the findings while Section 5 presents the conclusion and implications of the study.

## **2. Millennials Technological Skills and Ability to Adapt to Change in the Banking Sector**

Canedo et al. (2017) point out that as a generation, millennials have a global outlook. Millennials are better educated than previous generations, they are very technologically savvy and are active on social media (Deal, Altman & Rogelberg, 2010). They have a short-term and goal-orientated outlook, value diversity and education, make decisions swiftly, demand quick action; in addition, they seek meaning and want to make a difference in the world (Schaefer, 2017). Empirical studies reveal that many Baby Boomers are competitive, work long hours, pay little attention to work-life balance and have concentrated on moving up in the organizational hierarchy (Myers & Sadaghiani, 2010). In comparison, millennials emphasize work-life balance and, therefore, seek flexible working environments (Myers & Sadaghiani, 2010).

Millennials are often referred to as "digital natives" (Calvo-Porrá, Pesqueira-Sánchez & Faiña Medín, 2019, p. 231). Millennials are technophiles and technologically savvy, they prefer flexible conditions of employment and are able to adapt quickly to change in the workplace. This practice creates a competitive advantage and promotes organizational efficiency and output. Due to technology being used increasingly in today's workplace, plus the fact that millennials engage with various technological platforms in their daily lives, they exhibit an

advantage over other generations within the workplace (Huyler, Pierre, Ding & Norelus, 2015). DeVaney (2015) confirms the characteristics that differentiate millennials from other generations: they are very comfortable using technology, they value collaboration, seek rapid career growth and increased rewards and stress the importance of transparent and unambiguous feedback.

Millennials have been brought up with technology (Schaefer, 2017) and their use of this knowledge differs to that of previous generations (Deal et al., 2010). They are connected continuously to various technological devices (Schaefer, 2017). Through their efficient use of technology, they obtain information speedily (Pew Research Center, 2010). Millennials want to be able to utilize technology in the workplace (Bannon, Ford & Meltzer, 2011) because, using technology to complete certain tasks instead of manual processes leads to increased efficiency. Their habitual use of technology results in their expecting to have access to senior management via email (Murray, 2011).

The use of technology by millennials within the workplace does have disadvantages. For instance, millennial employees can spend approximately two hours each working day using technology for personal issues, a practice that reduces the company's level of productivity (Kim, 2018). This behavior causes some employers to become cautious about employing millennials (Kim, 2018). Kim (2018) however, points out that when millennials use technology at work for non-company related matters, this habit is not about their being lazy. Rather, it is due to millennial employees having "distinctive work values, learning styles and multitasking proficiency" (Kim, 2018, p. 268).

Millennials prefer a style of work that is non-hierarchical, team-based (Bennett, Pitt & Price, 2012) and not structured in terms of status. Millennials want to express their opinions in the workplace and to be heard by their organizations (Schaefer, 2017). They do not want 'to sit' in an office all day without interacting with colleagues (Schaefer, 2017). Millennials prefer to know what an organization expects from them, the type of career prospects they will have and how they will be rewarded for their services (Yigit & Aksay, 2015). They seek financial stability, challenges and personal growth; and, as indicated above, want to make a positive contribution to both their organization and the world (Holt, Marques & Way, 2012). Kotkin (2010) asserts that retaining highly skilled millennial staff should be an important goal for companies because, this group's aspirations for making a positive difference in society promotes an ethical workplace.

### **3. Research Design and Method**

This study is exploratory in nature and, thus, a qualitative research design was adopted. This design enabled the researchers to obtain greater insight into the value of millennials in the South African banking sector (Barnham, 2015). A purposive, non-probability sampling technique was used to select 12 executive and senior managers in Johannesburg, South Africa. This sample represented four of the five dominant commercial banks in South Africa. The 12 participants were responsible for managing and monitoring performance in their business units within their bank. Ethical clearance for the study was granted by the University of Johannesburg in South Africa.

Data was collected through the use of 12 face-to-face semi-structured interviews. An interview guide was developed that included a set of open-ended questions. Each interview was 45 minutes in duration. Interviews took place at the respective workplaces of the participants. Probing questions were asked during the interviews in order to gather deeper insight into the participants' responses. The intended purpose of this approach is to add depth to the data collected whilst maintaining a logical flow throughout the interview (Park & Park, 2016). Interviews were recorded after the consent of participants was obtained and, subsequently, transcribed.

Prior to commencing the interviews, potential participants were thoroughly briefed about the purpose of the study. Confidentiality and privacy were also discussed in detail and participants signed a consent form indicating their willingness to participate in the study. After each interview, participants were debriefed accordingly.

A qualitative content analysis method was applied to the data to extract the views of the participants on the value of millennials within the South African banking sector. This particular method was chosen because it provides an objective and systematic way of analyzing qualitative data (Elo, et al., 2014). Both the interview transcripts and recordings were used in the data analysis process, which involved thoroughly reading through each interview transcript several times, as well as listening to the interview recording. Units from the data were then drawn up and assigned codes (Bengtsson, 2016). These codes were then grouped into categories which were used to identify themes (Bengtsson, 2016) which are discussed in the findings section below.

#### **4. Findings and Discussion**

Four major themes emerged from the data analysis. Overall, the findings suggest that millennials make a positive contribution to organizational performance within the South African banking sector. The following section discusses the four themes and selected quotes of participants in the context of the findings.

##### **Theme 1: Millennials play an important role in ensuring that South African banks can compete within the future banking landscape.**

Three categories are linked to the second theme. For the first category 'Millennials are the future of banking', all 12 participants in the study strongly agreed that millennials were necessary for the future of the South African banking industry and would play a game-changing role in the post COVID-19 pandemic world. The second category was 'Millennials change the way in which people think' (eight (8) out of 12 participants) while the third category was 'Millennials change the way in which the bank operates' (eight (8) out of 12 participants). Participants commented:

P4: I think the noise they are making is starting to get organizations to start thinking about being more flexible.

P11: As opposed to expecting millennials to adapt to old ways of doing things, we need to structure and build strategies in organizations in a way that takes into consideration what is happening.

This finding reveals that millennials constantly look for different ways of conducting tasks more efficiently and, therefore, they positively change and influence the way in which banks operate. They are risk-takers and proactively pursue their ideas. The findings show that millennials are not afraid to challenge the ideas of senior colleagues and suggest their own solutions to workplace challenges. These findings are aligned with those of researchers Hershatter and Epstein (2010), Moon (2014) and Yigit and Aksay (2015). In addition, because millennials do not fear failure as much as previous generations and are highly confident and technologically savvy, these qualities add to their tendency to challenge the *status quo* (Burststein, 2013).

This finding is also in line with the way in which South Africa banks are changing their business models. South Africa banks are moving away from the traditional banking model of primarily conducting banking face-to-face in branches to more digital banking solutions which involve the utilization of the Internet for remote banking (DeVenter, 2020). An illustration of this is that banking customers in South Africa can apply for a loan, purchase foreign exchange, airtime and lotto tickets, invest, transact and open and close their bank accounts online. Therefore, South African banks which can attract and retain skilled millennials who have technological know-how and can collaborate and think 'outside the box' are likely to create a long-term competitive advantage for banks (Ugwu & Osisioma, 2017).

*Theme 2: Millennials are innovative, they find creative solutions to problems and situations and drive organizational performance*

Two categories are associated with this theme. The first category is 'Millennials tend to think differently and add fresh insight into workplace situations' (11 out of 12 participants). The majority of participants were of the view that millennials brought a new and different perspective into the workplace. This finding is supported by Wood (2019, p. 115) who argues that one of the strengths of millennial employees is that "millennials are extremely innovative" and handle organizational and world problems differently. This finding is also consistent with results recorded in the related literature and provides evidence that millennials are creative, 'out-of-the-box' thinkers (Ionica & Alina, 2017) who solve problems in new and innovative ways (Holt, et al., 2012) and, therefore, contribute to improving organizational performance. For the second category, five (5) participants were of the view that 'The tendency of millennials to innovate and digitize contributes positively to organizational performance'. This finding suggests that millennials think differently from other generations, they are inventive and they bring a new perspective into the workplace. Wood (2019) adds that businesses and societies benefit from the creative, unorthodox and novel ideas that millennials produce within the workplace.

As some participants remarked:

Participant 6: Millennials are open to new ways of working and experimentation which, in general, I believe gives better outcomes.

Participant 9: Millennials challenge in terms of why we do things the same way we have been doing.

Participant 11: They bring a different dimension to the work environment, particularly the way things happen here.

However, an unexpected finding was that although millennials develop creative and innovative ideas, this practice does not always result in their implementation. This fact suggests that millennials require an organizational culture that embraces change and the use of technology and is strong in implementing creative and innovative ideas.

*Theme 3: Millennials challenge the status quo within the workplace and they approach work with an entrepreneurial mindset.*

The majority of the participants nine (9) said that millennials challenge the status quo within the workplace and approach work with an entrepreneurial, risk-taking mindset. Millennials are not afraid to question and challenge outdated thinking, ideas and processes within the workplace. They prefer to work in a less traditional, more relaxed, comfortable and 'easy-going' work environment and they are "purpose-driven" (Wood, 2019, p. 117). This finding is consistent with that of Bennett, et al. (2012) who state that millennials dislike excessive bureaucracy, working in silos and having to use titles of individuals.

Four (4) participants highlighted that millennials are proactive and adapt to change within the workplace. Seven (7) of the 12 participants suggested that the impact of millennial traits on innovation will be even greater in the near future. Finally, eight (8) of the 12 participants said that millennials are confident and outspoken in their interactions within the workplace.

The views of the participants are reflected in the quotations below.

Participant 8: *"They have a lot to offer in the innovation space and there should be a more prone area for them to drive because of their technology au faitness."*

Participant 9: *"They aren't shy to go and present things to the CEO or whoever as long as they get the buy-in."*

Participant 10: *"Fear of failure is lower with millennials than the fear of failure is with generations outside."*

*Theme 4: Millennials adapt quickly and easily to changes in technology and utilize technology more readily in completing work tasks.*

There were two categories for this theme. For both categories, seven (7) out of 12 participants stated that 'millennials use technology to find faster and better ways of completing their tasks' and 'millennials pursue tasks with agility and a fresh way of thinking in order to deliver their outputs'. One (1) participant observed:

P6: Millennials seek to work from anywhere, work from home, optimize workspaces and work times.

A finding here is that millennials use technology to complete their tasks with greater ease and this behavior contributes to improved organizational performance. The findings highlight that

millennials' technological savvy makes it possible for them to work from any location, at any time, so that they can finish tasks timeously. This fact is supported in the reviewed literature because Smith and Nichols (2015) point out that millennials use technology in their day-to-day tasks, which results in higher levels of efficiency in the workplace. The role of technology and the Internet features strongly in the lives and routines of millennials (Calvo-Porrall, Pesqueira-Sanchez & Faiña Medín, 2019). For example, millennials use computers, tablets and cellular phones in order to access social media, networking, shopping and leisure sites and computer games extensively for a variety of uses in their workplace, social and personal lives (Calvo-Porrall, et al., 2019).

Hershatte and Epstein (2010) and Murray (2011) indicate that because millennials can immerse themselves in technology, they are effective at multi-tasking and are able to process large amounts of information. South African banks are also "embracing technological shifts, digitizing customer and internal capabilities and keeping pace with evolving technology..." (Price Waterhouse Coopers, 2020, p. 22).

The majority of the participants seven (7) maintained that the millennials' ability to utilize technology in the workplace is a significant driver of productivity. This finding reveals that millennials can make a greater contribution towards increasing the bank's productivity if they work in a flexible environment which allows them to use technology when undertaking tasks. This result is consistent with the findings of Murray (2011) who contends that millennials can achieve high levels of productivity if they are in environments that match their traits. In a similar vein, Canedo, et al. (2017) suggest that that by optimally utilizing millennials' skills and their affinity for technology and change, companies can use this behavior to their advantage in order to achieve their organizational goals successfully.

## **5. Conclusion and Implications**

Although this study is limited to five (5) major banks (listed in the Introduction) operating within Johannesburg, South Africa, it does provide useful insights as to the value of millennials in the banking sector within South Africa. Millennials play a positive role in the South African banking sector in the following ways: they play a critical role in ensuring the future sustainability of South African banks.

The implications of this study's findings for managers in the banking sector are that they should create a conducive, flexible and inclusive work environment for millennials and non-millennials, whereby all employees can perform optimally. This practice entails providing millennials with access to technology, allowing them to work both within teams or autonomously when the need arises, encouraging them to be innovative, taking an interest in their career aspirations and rewarding them for their efforts. Further research can be conducted to understand how millennials operate within the workplace from the perspective of different cultures; to contrasting the behavior of millennials in the workplace in developed versus developing countries' contexts.

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## Measuring the Degree of Internationalization Based on Entrepreneurial Value Chain Activities: An Analysis for Micro and Small Enterprises in West Austria

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### Abstract

In previous research, the degree of internationalization is determined on the basis of different criteria (e.g. foreign turnover/total turnover, foreign assets/total assets etc.), which does not allow for a multivariate view of the phenomenon. In the context of this study, a completely new approach was used to determine the degree of internationalization by examining how international individual activities of the entrepreneurial value chain of Porter are. For this purpose, responses based on a questionnaire from 461 micro & small family businesses were collected and the data for export-oriented and non-export-oriented were analyzed using logistic regression. The results show that family businesses that are export-oriented differ statistically significantly from non-export-oriented family businesses in certain activities (outbound logistics, sales, management). Nevertheless, it is noteworthy that the majority of the latter show a certain degree of internationalization in many activities of the value chain, which is a new result not found in previous literature.

When testing the robustness of the results (applying logistic regressions to micro & small family businesses separately), it can be seen that the outbound logistic is not significantly different for both types of business, but that the human resource activity becomes more significant for small firms. The results of the study show that the existing definitions of internationalization in the literature are not sufficient to capture the "true" degree of internationalization of a company. A non-export-oriented company can very well be involved in international relations through activities in the value chain, so that a classic separation between export-oriented and non-export-oriented is too narrow and therefore a broader view in the research field is necessary. The results are particularly suitable for developing a complementary or alternative model of stage theory.

### Keywords

Family firms, internationalization, resource-based-view, stage theory, value chain

## Impact of Digital Technologies on Finance Profession

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### **Abstract**

Digital technologies are impacting the finance profession in different ways. On the one hand, repetitive tasks are described to be replaced by digital technologies. On the other hand, digital technologies may enrich the way tasks are performed and enable higher focus on value-add tasks as well as on core competencies. The accounting literature is putting an increased emphasis on analyzing the impact of digital technologies. This paper seeks to explore and structure the most recent view of finance research publications with regards to the impact of digital technologies on roles, competencies and organizational structure of finance departments. This paper concludes that a clear picture on the future state of finance departments is not yet existing. However, tendencies are visible and the impacts and interdependencies need to be further analyzed.

### **Keywords**

Finance profession, digital technologies, professional skills

## 1. Introduction

Digitalization has become a topic in financial research publications with increasing number of articles over the last years (Abad-Segura & González-Zamar, 2020). Schäffer and Weber (2019) stated that finance departments classify digitalization as an important and impactful trend, and actions as well changes to finance organizations were reported to be implemented.<sup>1</sup> However, the implementation of tools of digitalization (digital technologies) in financial processes is described to be in an early stage (Gotthardt et al., 2020; Kokina & Blanchette, 2019; Losbichler & Lehner, 2021). Furthermore, the disrupting part of digital technologies is not discussed broadly in accounting research literature (Marrone & Hazelton, 2019).

This paper analyses the impact of digital technologies on finance departments by assessing the most recent research publications in this sector. The main target of this paper is to analyze the different directions in research and to provide an overview on the current and future state of literature with regards to finance profession. This study does not differentiate between (financial) accounting, management accounting and auditing, and targets to assess the finance function in total. The analysis is based on most current articles published from 2016 to 2021, with the main search term “digital technologies” (digital, digit and digitalization) combined with “finance profession” (finance, accounting and control). The business reference source Scopus is used to perform the search. The digital technologies are not specified in the search process as the focus is on the impact on finance departments. For identification of relevant articles “title, abstract and keywords” are selected to search for the terms. The references of the identified articles are reviewed as well and included in this study once these met the criteria mentioned above. To keep the focus on research view, only research articles and conference papers are analyzed in this study, i.e. reports from accounting bodies and consulting organizations are not included.

Most recent papers used roles, competencies and organizational structure to analyze and to describe the impact of digital technologies on finance profession (Andreassen, 2020; Möller, Schäffer, & Verbeeten, 2020; Oesterreich & Teuteberg, 2019; Oesterreich, Teuteberg, Bensberg, & Buscher, 2019). These keywords are applied for the analysis in the present study. The role entails the main tasks of the finance function. The competencies can be described as needed skills of the employees (Möller et al., 2020). Organizational structure comprises the size of the finance department as well as the effectiveness and impact on the processes of the organisation (Möller et al., 2020). Moreover, the later contributes to the analysis of inter-organizational competition for influence and tasks (Andreassen, 2020).

The remainder of this paper is structured as follows. Section 2 introduces the main terminology in this context. Section 3 discusses the results and the implications. Section 4 concludes the paper.

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<sup>1</sup> Changes for the set-up of management accounting roles were requested already 40 years ago as described by Schäffer and Weber (2019).

## 2. Theoretical Background

### 2.1. Digital technologies

This paper is focused on digital technologies in total and not on a single stream as the combination of the digital technologies is described to be the main driver for the impact on finance departments. Digital technologies consist of several elements having an impact on the finance departments. The terminology of digital technologies is described below as it is used in the analyzed articles in order to create a consistent relationship between the digital technologies and the assessed impact on finance departments.

Big data describes the increased volume of generated and accessible data with increased velocity and variety. Velocity describes the speed of data creation, and variety refers to structural heterogeneity covering structured and unstructured data (Andreassen, 2020; Appelbaum, Kogan, Vasarhelyi, & Yan, 2017; Bhimani, 2020; Janvrin & Weidenmier Watson, 2017; Moll & Yigitbasioglu, 2019; Oesterreich & Teuteberg, 2019; Richins, Stapleton, Stratopoulos, & Wong, 2017). This data is described to be internal and external with increasing volume of social media data (Cockcroft & Russell, 2018; Marrone & Hazelton, 2019). Big data is described to have greater potential to derive valuable information like patterns and anomalies than “small data” (Cockcroft & Russell, 2018).

Business analytics is described as the use of data, statistical analysis and quantitative methods in order to improve insights and to support fact-based decisions (Appelbaum et al., 2017; Rikhardsson & Yigitbasioglu, 2018). Business analytics is classified in descriptive analytics, predictive analytics and prescriptive analytics (Appelbaum et al., 2017). Spraakman, Sanchez-Rodriguez, and Tuck-Riggs (2021) used a similar definition for data analytics which they defined as “the use of information technology tools to perform data analyses”. Data mining combines “statistics, machine learning and artificial intelligence to discover patterns in large data sets” (Gotthardt et al., 2020) and is described as a basis for business analytics (Oesterreich & Teuteberg, 2019). Moreover, the use of external information increased in business analytics as described in studies (Andreassen, 2020).

Machine learning is defined as the use of algorithms and statistical models which is closely related to statistical learning (Andreassen, 2020). Additionally, machine learning systems are described to “learn” from data and decisions which enables these systems to perform simple decisions and classifications (Gotthardt et al., 2020).

Artificial intelligence<sup>2</sup> is described as complex working mechanism able to process unstructured data including text and pictures and able to perform self-learning (Z. Li, 2020) or as “synthetic intelligence or computer system intelligence that stimulates intellectual functions” (Shaffer, Gaumer, & Bradley, 2020). Artificial intelligence is classified in three categories. Reactive artificial intelligence reacts to events with pre-programmed responses, limited memory artificial intelligence system reacts based on previously stored event reactions, and “future class” artificial intelligence deals with self-guided thoughts and reactions (Shaffer et al., 2020). Other authors defined artificial intelligence as systems acting like humans and systems which could perform problem-solving and learning as well taking over planning tasks and decision making (Petkov, 2020; Suleiman et al., 2020). Moll and

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<sup>2</sup> First implementation of artificial intelligence is reported to be 30 years ago as discussed by Petkov (2020).

Yigitbasioglu (2019) described machine learning and statistical techniques as innovations of artificial intelligence.

The definition of reactive artificial intelligence as used by Shaffer et al. (2020) shows similarities to the definition of robotic process automation (RPA) which is described as automation of rule-based tasks and processes using scripts (Gotthardt et al., 2020; Kokina & Blanchette, 2019). Gotthardt et al. (2020) pointed out that robotic process intelligence and artificial intelligence are two different technologies that can be used separately or in combination. Most of the technologies currently described as artificial intelligence in publications are related to process automation without machine learning (Gotthardt et al., 2020). However, RPA requires machine learning to unleash its full potential and advanced RPA is described as an enabler for the implementation of artificial intelligence through machine learning (Gotthardt et al., 2020). Kokina and Blanchette (2019) defined the process “robot automation”, which is able to perform “non-routine tasks by involving judgement based on unstructured data”, as intelligent automation.

The definition of cloud technology and blockchain should be omitted in this paper as little indication was found that these technologies have a major impact on finance profession itself, especially regarding roles and organizational structure.

Generally, the digital technologies can be classified into two main groups. The first group provides additional options for tasks and role expanding as well as supporting the task execution, and the second group comprises technologies to replace tasks through automation. After having discussed the digital technologies, the characteristics of the financial role on which these technologies may have an impact on are assessed in the next chapter.

## **2.2. Characteristics of financial role and tasks**

Some papers described finance roles from a general view, focusing on the main targets and other papers provided a detailed list of tasks. The finance role from a general view is described as interpreters and communicators of figures, which are imperfect depictions, and which are a result of a communicative act and needed to be understood rather than simply reported (Quattrone, 2016). Moreover, indications are given to treat finance as a rationality function of the organization (Andreassen, 2020; Quattrone, 2016).

Furthermore, the finance profession is described as “the language of business” (Richins et al., 2017). The business orientation as characteristic of finance professionals, and especially the characteristic of management accountants, is discussed in several articles. He (2020) described management accounting as the “interdisciplinary product of management knowledge and accounting knowledge”. Main responsibility of management accountants is to gain insights from data in order to support management decision (Spraaakman et al., 2021). Besides business orientation, data orientation is discussed as a second important pillar for management accountants. Collection, extraction and analysis of information from diverse

databases is described as a main role of management accountants (Pilipczuk, 2020).<sup>3</sup> Similarly, finance is seen as the creator of information for decision making (Janvrin & Weidenmier Watson, 2017). The business orientation and involvement in decision-making is defined as business partnering which enlarged the role of finance professionals to information experts, methodology experts and gatekeepers (Andreassen, 2020) with a pragmatic, management-oriented and broad mind (Oesterreich et al., 2019; Oesterreich & Teuteberg, 2019). However, the extent of the management accountants fulfilling the business partner role depends on the capabilities of the individual management accountant (Andreassen, 2020).

The tasks of finance professionals can be summarized as creation of financial statements and the support of and involvement in decision making on operative and strategic level (Andreassen, 2020; He, 2020). Petkov (2020) provided a detailed list of accounting functions which support the creation of financial statements. Other authors reported as main tasks the reporting of historical value, performance measurement and decision support (Appelbaum et al., 2017). Finally, the role of accounting is described to identify and evaluate economic events with the target to create financial statements (Petkov, 2020) and to communicate the findings to decision makers (Richins et al., 2017).

### **3. Impact of Digital Technologies on Finance Profession**

#### **3.1. Impact of digital technologies on financial roles**

In this section, we discuss the implication of digital technologies on the roles, competencies and organizational structure. The starting point is the qualitative analysis of the impact on the roles, followed by the discussion of the impact on competencies, and resulting organizational challenges. The impact on the roles is divided into three parts. The first part discusses the impact of digital technologies on replacing financial tasks. The second part covers the reaction and potential options of finance departments due to the implementation of digital technologies. The third part analyses the boundaries of digital technologies and the corresponding implications on financial tasks.

##### *Replacement of basic tasks*

Most of the reviewed articles, discussing basic financial tasks, pointed out that basic tasks will be replaced by digital technologies. Basic accounting processes like general bookkeeping and inventory management are going to be replaced by artificial intelligence (Shaffer et al., 2020). Some studies also pointed out, that the day to day tasks in accounting may be completely replaced by artificial intelligence (Li, 2019; Li, 2020) or the majority of them may be replaced short term (Suleiman et al., 2020). Furthermore, more complex tasks like analysis, calculation, organizing of internal financial database, basic forecasting processes and applying financial accounting standard could be done more efficiently by artificial intelligence (Li, 2020). Furthermore, the digital transformation is ongoing and will lead to fully autonomous accounting system which includes artificial intelligence cognition and decision making (Lehner, Leitner-Hanetseder & Eisl, 2019). The information flow and the exchange of information between different systems is described to be controlled by digital technology and not to

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<sup>3</sup> Pilipczuk (2020) used the finance position “management accountant” and “accounting manager” interchangeably, although these roles cover different tasks in the finance departments and these roles show little overlap regarding the tasks in practice.

require any human interface (Andreassen, 2020). Petkov (2020) provided a list of accounting functions which can be potentially replaced by artificial intelligence. The study pointed out that the potential of artificial intelligence is to cover big portion of the accounting tasks, with the restriction that only a “handful” of tasks can be substituted by artificial intelligence in the present stage (Petkov, 2020). Furthermore, the audit function will be impacted by enabling testing of the entire population reducing requirement for human input (Richins et al., 2017).

#### *Impact and potential options for finance profession*

The reaction of finance departments on the replacement of the tasks and the resulting opportunities is discussed to be manifold. The finance profession may not be replaced but rather changed in the task structure (Korhonen, Selos, Laine & Suomala, 2021; Richins et al., 2017). Richins et al. (2017) stated that some tasks will be automated, the combination or bundle of tasks performed by finance professional is not easily automatable. Moreover, automation does not consequently results in more efficient processes as some tasks can be classified as nonprogrammable (Korhonen et al., 2021). Other studies pointed out that the analytical as well as the interpretational tasks as well as human creativity will not be replaced by digital technologies (Suleiman et al., 2020). In contrary to this statement, Gotthardt et al. (2020) pointed out that the human role may be limited to supervision of automated processes. However, the combination of artificial technology and RPA will replace the repetitive tasks and humans will be able to use their expertise in decisions that require judgement (Gotthardt et al., 2020; Korhonen et al., 2021; Oesterreich et al., 2019). Similarly, Kokina and Blanchette (2019) stated that finance employees were performing a higher portion of value add tasks after implementation of RPA and that the new role bot manager resulted from this implementation.

The audit function is discussed controversially in the reviewed literature. Some authors described the audit function to be reduced to testing artificial intelligence rules (Petkov, 2020) or already focusing on the application of algorithms (Gardner & Bryson, 2021) and governance of digital technologies which still needs to be implemented (Gotthardt et al., 2020; Kokina & Blanchette, 2019). Consequently, the audit function is currently transferring to a technical process focusing on application of algorithms based on this stream of literature. Other authors noted a contrary view on the audit function. Although the entire population will be tested at a time, audit professionals will need to perform manual follow ups and problem driven analysis on unstructured data (Richins et al., 2017). Gotthardt et al. (2020) pointed out that automation may increase compliance and reduce risks as machines always strictly follow the process. On the other hand, in comparison to humans, systematic errors will not be recognized by an automated process and the implication of changes in the business environment may not be judged by the automated process as well (Gotthardt et al., 2020). Kokina and Blanchette (2019) stated that human process owners remained responsible for internal controls after implementation of RPA. The increased responsibility of audit professionals is mentioned by Cockcroft and Russell (2018) as auditors will need to learn tools and techniques to take responsibility for data quality management. Moreover, Richins et al. (2017) stated that fraud detection is difficult to fully automate as it requires social intelligence. Additionally, in case fraud detection will be performed fully automated and mainly rule-based, it will open opportunities for fraud having knowledge of the underlying rules (Richins et al., 2017).

Several articles discussed advantages for management accounting resulting from implementation of digital technologies. He (2020) stated that basic tasks of financial accountants will be replaced by artificial intelligence and that the transfer from financial accounting to management accounting is the consequent step. The use of financial information to strengthen business management is described as a main shift of the (financial) accounting role (Li, 2019). Furthermore, Cockcroft and Russell (2018) stated that finance professionals might move to more strategic and business oriented roles as described in reviewed papers. After implementation of digital technologies, management accountants on group level gained more control over the data due to integrated information systems or could extend their business partner role due to increased level of overview on informal information for decision making (Andreassen, 2020). However, tasks from divisional management accountants were narrowed to providing financial insights mainly and no involvement in business analysis existed any longer (Andreassen, 2020).<sup>4</sup> Their tasks moved to more supporting roles for specialized functions on group level due to the centralization of the decision making process (Andreassen, 2020).

Moreover, the increase in data is described to be of advantage for (management) accounting. Janvrin and Weidenmier Watson (2017) pointed out that accounting was always expanding their expertise to new data sources and big data may be described as a consequent development step of accounting. Management accounting will gain advantage from the digital technologies regarding the usage of large amount of information for more effective decision making support (He, 2020). Some studies also described that digital technologies, like big data, have to be covered by finance departments mainly (Janvrin & Weidenmier Watson, 2017). Cockcroft and Russell (2018) summarized that finance profession “is best placed to manage big data function within organizations”. The reasons benefiting finance profession for this role, are existing trust in finance professionals and the ability of finance professionals to explain numbers (Al-Htaybat & Alberti-Alhtaybat, 2017; Cockcroft & Russell, 2018). Richins et al. (2017) pointed out that big data usage requires the link of understanding the analysis of the data and the business strategy.

Furthermore, Bhimani (2020) pointed out that in digitalized organizations economic transactions represent only a portion of control information. Consequently, additional data will be required to be analyzed for identification and evaluation of economic events. The constraints of artificial intelligence will be the correct identification of economic events which may limit the number of accounting tasks artificial intelligence could take over from humans (Petkov, 2020). On contrary to the strengthening of the business partner role, Quattrone (2016) described the contradicting movement of management accountants out of the business partner role towards a quantitative methods oriented function.

Spraakman et al. (2021) stated that no changes to the main responsibility of gaining insights from data were evidenced from their case study. As the main tool for data analytics remained Excel, this could be an evidence that the implementation of digital technology is in an early

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<sup>4</sup> Andreassen (2020) analysed the impact of digital technologies on the role of management accountants in the technology-oriented finance sector with this sector having a high number of statisticians which differentiate this sector from other sectors being an early mover in applying digital technologies. This point allowed a better analysis of the adoption of machine learning as it requires statistical knowledge to prepare data and interpret the predictive models as described by Andreassen (2020).

stage and this finding may be disproved at later stages of implementation. In contrary to this statement, Spraakman et al. (2021) concluded that the use of Excel may become more important in the future due to high familiarity with this software as well as the movement to self-service data analytics performed by management accountants.

#### Implications due to limitations of digital technologies

To close this section the implications from boundaries of digital technologies are discussed below. This topic shows an overlap to the previous chapter and is chosen to discuss further options and challenges finance profession is facing. Main limitations discussed in the reviewed literature are related to the creation and extensive use of data. Quattrone (2016) stated that the use of digital technologies may lead to cognitive overload due to excess of data, resulting in taking wrong decisions, which Spraakman et al. (2021) mentioned not to be confirmed in their case study. It is important to mention that Quattrone (2016) referred to extensive use of digital technologies and Spraakman et al. (2021) analyzed the current state of business analytics. The increase in available data will not automatically lead to better decisions as large amount of data can be unreliable or biased (Richins et al., 2017). Moreover, more data leads to more correlations (Richins et al., 2017). The identification of useful models resulting from digital technologies requires business understanding as well as understanding of underlying data and the approaches used to analyze this data (Richins et al., 2017). Moreover, underlying data may be biased as competitors may have a comprehensive social media management which may limit the reliability of results from social media data analysis (Richins et al., 2017). Schäffer and Weber (2019) stated that the trend regarding unlimited information access slowed down and that the “old-fashioned” monthly reporting process has shown “pragmatic” advantages regarding communication and learning processes. Similar statement is made by Quattrone (2016) who classified the figure reporting and decision making process as a communicative and judgmental act.

Losbichler and Lehner (2021) pointed out that due to physical limits, artificial intelligence might not have the capability to provide “completely accurate forecasts in today’s complex environment”. Moreover, the existence of certain elements impacting the future state is unknown and cannot be included in decision making and be modelled by artificial intelligence systems as well as limited controllability of elements impacting the future state (Losbichler & Lehner, 2021). The interaction between humans and digital technologies is a topic for discussion in the reviewed papers to cover the limitations of humans and digital technologies. Losbichler and Lehner (2021) stated that artificial intelligence can support the forecast processes as it can compensate human deficits in skills and behavior. Similar view is shared by Gotthardt et al. (2020), who pointed out that in order to create effective automated processes interaction with humans needed to be implemented into the process. Digital technologies are more likely to support humans in financial processes rather than completely replacing them (Marrone & Hazelton, 2019).

### **3.2. Impact of digital technologies on skills**

The challenges to the finance role and the described changes to the structure of financial tasks require finance employees to leverage their existing skills in combination of acquiring new skills. The analyzed articles pointed out that finance professionals possess at least basics of

the newly required skills which they need to further develop as pointed out by Richins et al. (2017): To fulfil their role as information provider, finance professionals developed skills to analyze and interpret data from multiple sources (Richins et al., 2017). The following chapter describes the skill set finance professionals need to cope with the upcoming challenges.

It appears obvious, that the higher focus on data science and higher business orientation will drive the new skill set and most of the analyzed papers pointed out<sup>5</sup> that improving data science and data analytics skills will be key for finance professionals. The use of digital technologies require higher skills in analytics (He, 2020) which historically has not played an important role for finance professionals (Andreassen, 2020). The implementation of digital technologies in finance requires finance employees being experts equally in finance and digital technologies (Gotthardt et al., 2020). Similarly, Appelbaum et al. (2017) pointed out that management accountants have to increase their knowledge in analytics and big data in order to fulfil the new role. Schäffer and Weber (2019) reported missing skills in IT and statistics of management accounting professionals. As finance profession is best placed to manage big data, competencies in analytics need to be increased to fulfil this role (Cockcroft & Russell, 2018). Janvrin and Weidenmier Watson (2017) pointed out that accounting requires to build new skills in big data and that this step can be seen as natural development of accounting, historically expanding their expertise to new data sources. In contrary to this statement, digitalization is not described as linear development and may not just be seen as a linear progression of the finance profession (Bhimani, 2020; Marrone & Hazelton, 2019).

The business orientation along with data science skills is described to be another important competency area for finance professionals. Finance employees need to strengthen critical thinking and market oriented view (Shaffer et al., 2020). Case studies showed that the role of technically oriented management accountants on group level moved to a digital technical specialist role (Andreassen, 2020). The role of financial accountants must shift from data-processing to financial management enriched by market oriented view (Li, 2020) resulting in building the required skills. Spraakman et al. (2021) stated that management accountants are expected to have business knowledge, to be able to take a multi-perspective view, which can be described as creative solution thinking. Moreover, strong communication as well as technical skills in order to provide value add through data analytics are critical (Spraakman et al., 2021). Generally, the skills of finance employees need to be broadened. Communicational, innovation and organizational skills will become more important (Li, 2019). Beside the strong focus on business environment taking the management perspective and getting familiar with digital technologies will be key for finance employees (Li, 2019).

Consequently, the combination of data science skills and business orientation is described as the superior path. Oesterreich et al. (2019) stated that management accountants should “combine functions of a strategic thinking business partner with the selected functions of a data scientist”. The adaption to digital technologies as well as higher focus on business related topics, is reported to be the path for finance employees to cope with the increasing use of digital technologies (Suleiman et al., 2020). The value add of management accountants is the clear communication and visualization of complex predictions and optimizations (Appelbaum

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<sup>5</sup> The summary of the analysed articles with regards to required skills is shown in appendix 1. The skill business orientation is included in the skill group “professional” as defined in appendix 2.

et al., 2017). Appelbaum et al. (2017)<sup>6</sup> pointed out that management accountants require to utilize the functions of digital technologies to a greater extent to remain a valuable business partner. From their view management accountants could make use of business analytics on big data for business decision support, taking into consideration complex objectives under the target of reducing business risk. Moreover, management accountants should move to a more strategic approach of managing key financial as well as operational drivers of the shareholder value (Appelbaum et al., 2017).

A contrary view is discussed in the reviewed papers by moving finance professionals to a more technical role. Gardner and Bryson (2021) pointed out that an effect of implementing digital technologies was “deskilling of previously expertise-laden embodied professional expertise”. Financial accountants may transform into a maintaining and developing role of artificial intelligence in the accounting sector (Li, 2020; Moll & Yigitbasioglu, 2019). Petkov (2020) described that artificial intelligence system requires proper maintenance with no further specification from which department or role this maintenance needs to be performed. Kokina and Blanchette (2019) stated that “process owners who become bot managers need to possess technology-related skills” to fulfil a self-service model, which means to decrease the reliance on IT for RPA support. The needed skills were described to be on an advanced level, including coding skills, with corresponding difficulties in gathering these skills for finance professionals (Kokina & Blanchette, 2019). Li (2019) pointed out that digital technologies require maintenance by “supporting financial organizations” like data operations team and financial modelling team without specifying which department these teams may be located in. To which department the skills may be located and what impact is described for finance organizations is discussed in the next chapter.

### 3.3. Impact of digital technologies on organization of finance departments

The size of finance departments is predicted to be reduced or was already reduced by the use of digital technologies (Andreassen, 2020; Li, 2020; Suleiman et al., 2020) as emphasized in appendix 1. Especially, currently performed basic and repetitive tasks will be replaced by digital technologies which will result in reduction of workforce in finance departments (Li, 2019; Suleiman et al., 2020). The decision makers are able to access the required information directly, which is described as a reason for workforce reduction (Andreassen, 2020). The decision making process is further described to be more centralized as the local knowledge and interpretation of data is replaced by digital technologies (Andreassen, 2020). In contrary to this, Shaffer et al. (2020) stated that financial planning and management accounting are experiencing little impact on the team size as digital technologies are not performing the interpretation of data. Moreover, studies mentioned that the demand for high-end finance professionals is increasing (Li, 2019). Schäffer and Weber (2019) reported that management accounting workforce has increased from year 2017 to year 2019. On the other hand, based on the expectations of management accountants, the workforce will be reduced mid-term (Schäffer & Weber, 2019). Richins et al. (2017) stated that the responsibility of management

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<sup>6</sup> Appelbaum et al. (2017) study is not taking the impact of digital technologies on finance employees into consideration but is focused on what management accountants should do or how they should use digital technologies to remain a valuable business partner.

accounting may increase over the next years as this function is best suitable to fulfil the role as strategic partner to business.

The interaction of finance department with other departments is discussed in the context of role development. Richins et al. (2017) classified the exploratory analyses to be performed by data scientist, but finance professionals can use their business acumen for interpretation of the results as well as derive implementable strategies for the achievement of financial objectives. For problem-driven analyses, on structured and unstructured data, the responsibility remains with finance professionals who possess domain-specific knowledge and can derive ex ante theory-driven hypotheses for testing (Richins et al., 2017). Generally, the collaboration between finance professionals and data scientists can be beneficial for organizations (Al-Htaybat & Alberti-Alhtaybat, 2017; Richins et al., 2017). Rikhardsson and Yigitbasioğlu (2018) stated that the analysis function currently performed by management accountants will be shared with other departments. Similarly, Knudsen (2020) discussed the movement of accounting related tasks to other departments and the reduced power of finance department due to higher portion of externally generated information which is not under control of finance professionals. Oesterreich and Teuteberg (2019) stated that the appearance of specialized roles like data scientist depends on the company size.

Another potential development for accounting professionals is described to be closer to communications or marketing teams as accountants will be exposed to visualization tools and social media data (Marrone & Hazelton, 2019). Moreover, data governance responsibility may move to finance as well (Cockcroft & Russell, 2018). Furthermore, accounting associations are working on incorporating digital technologies knowledge into accounting education (Janvrin & Weidenmier Watson, 2017) to better position the finance profession for the upcoming tasks movements between different departments. In contrary, Oesterreich et al. (2019) stated that organizations and finance professionals have not treated data science skills accordingly. On the other hand, Pilipczuk (2020) stated significant variation in big data skills requirements in job postings among the researched countries.

Spraakman et al. (2021) provided information in which departments data analytics are currently performed. Approximately one third of the respondents were employed outside of finance departments (Sprakman et al., 2021). As a constraint it should be mentioned, that roles like Supply Chain Analyst and Pricing Analyst were listed in their respondent's titles which may not be classified as a core financial responsibility, especially in global organizations. Moreover, their study showed that data expertise is more likely to be implemented at management accounting level and not at IT level (Sprakman et al., 2021). Kokina and Blanchette (2019) stated that higher independence from IT department, which is also called self-service model, may have a positive impact on the performance of RPA. Moreover, the implementation of RPA is usually driven by the process owners and not by IT department (Kokina & Blanchette, 2019). Process owner were also committing to perform a process manually in case of script failure (Kokina & Blanchette, 2019). In contrary to this statement, the application of algorithms or the move to more technical roles within finance showed inefficiencies of gaining the required expertise to understand the audit process in depth (Gardner & Bryson, 2021).

#### 4. Conclusion

This paper analyses the most recent research literature to provide a more comprehensive understanding of the impact of digital technologies on finance departments. The paper focuses on the impact on future roles and tasks, the required skills and competencies, and the resulting organizational changes in finance departments. Regarding the future roles of finance professionals, a clear picture could not be derived from the reviewed literature. On the one hand, a more technical direction is discussed by supporting the digital technologies. On the other hand, closer business orientation with the support of digital technologies is discussed. The main question looks to be: Will digital technologies support and enlarge the role of finance professionals or will the finance profession support and maintain the digital technologies? There seems to be an agreement in the reviewed articles that the improved skills in data science and business orientation is the superior path for finance professionals. Regarding the future organization, a reduction in size of finance departments is more likely to happen with higher number of high-end professionals performing higher portion of value-add tasks.

As limitations it should be mentioned, that the implementation of digital technologies is still on a relatively low level and the implications for finance departments may be more closely described in the upcoming years. Gotthardt et al. (2020) mentioned that five percent of companies are mature in artificial intelligence and 15 percent in RPA. Lack of skills is described as potential reason for low implementation rates (Gotthardt et al., 2020). Moreover, data issues as well as the impact on the employees' position are described as reasons to postpone implementation of digital technologies (Gotthardt et al., 2020).

Furthermore, expected cost reduction is used as the main driver of implementation of digital technologies (Gotthardt et al., 2020; He, 2020; Kokina & Blanchette, 2019; Li, 2020; Petkov, 2020; Shaffer et al., 2020). Efficiency increase and reduction of errors is discussed as well (He, 2020; Kokina & Blanchette, 2019; Li, 2019). Most of the reviewed articles used results of studies from auditing and consulting companies pointing out the productivity gains (Gotthardt et al., 2020; He, 2020; Kokina & Blanchette, 2019; Li, 2020; Shaffer et al., 2020). As auditing and consulting companies' primary target is to advertise their own consulting services, it is important to bear in mind that the information of this reports regarding digital technologies may be overemphasized.

Moreover, this paper focuses on studies with the term finance profession. Studies on data sciences and IT may provide a different picture regarding the data ownership and the leading role in analyzing structured and unstructured data. This may be classified as a single point of view on a broader topic where several functions are trying to gain the power of and responsibility for.

Future research needs to focus on the interaction between digital technologies and the skills of finance professionals as well as to elaborate on the drivers and interdependencies of those. Moreover, additional research is needed to investigate how digital technologies and humans may "collaborate" in the future state and what implications can be derived to be best prepared for the upcoming challenges.

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## Appendix 1: Summary of literature review

Author	Type of study	digital technologies	Finance area	SKILLS					ORGANISATION	
				profession al	data science	it	methodo logical	soft	Size	Impact
Al-Htaybat & Alberti-Alhtaybat, 2017	case study	big data	finance		x					
Andreassen, 2020	exploratory case study	digital technologies	management accounting	x					-	
Appelbaum et al., 2017	conceptual	business analytics	managment accounting	x	x					
Bhimani, 2020	conceptual	digital technologies	management accounting		(x)	(x)			(-)	
Cockcroft & Russell, 2018	literature review	big data	finance	x	x					
Gardner & Bryson, 2021	case study	digital technologies	auditing		x	x			-	-
Gotthardt et al., 2020	qualitative review, case study	robotic process automation (artificial	financial accounting, auditing	x	x				-	
He, 2020	commentary	digital technologies	finance	x	x	x			-	
Janvrin & Weidenmier Watson,	commentary	big data	financial accounting		x					
Knudsen, 2020	literature review	digital technologies	finance	x	x	x				-
Kokina & Blanchette, 2019	exploratory case study	robotic process automation	financial accounting							
Korhonen et al., 2021	case study	digital technologies	managment accounting		(x)					
Lehner et al., 2019	suggestion for research agenda	artificial intelligence	finance						-	
Y. Li, 2019	commentary	artificial intelligence	financial accounting	x	x			x		+
Z. Li, 2020	commentary	artificial intelligence	financial accounting	x	x					
Losbichler & Lehner, 2021	conceptual	artificial intelligence	management accounting		x					
Marrone & Hazelton, 2019	literature review	digital technologies	financial accounting		(x)	(x)		x		
Moll & Yigitbasioglu, 2019	literature review	digital technologies	finance	x	x	x				
Oesterreich & Teuteberg, 2019	case study	business analytics	managment accounting		x	x				
Oesterreich et al., 2019	case study	digital technologies	management accounting	x	x	x				
Petkov, 2020	qualitative review	artificial intelligence	finance		x				(-)	-
Pilipczuk, 2020	case study	digital technologies	managment accounting		x	x	x			
Quattrone, 2016	conceptual	digital technologies	management accounting							
Richins et al., 2017	conceptual	big data	finance	x	x					
Rikhardsson & Yigitbasioglu, 2018	literature review	business analytics	managment accounting		(x)				(-)	
Schäffer & Weber, 2019	case study	digital technologies	management accounting		x	x			-	
Schaffer et al., 2020	qualitative review	artificial intelligence	finance	x	x			x	-	
Spraakman et al., 2021	case study	data analytics	managment accounting	x	x	x		x	-	
Suleiman et al., 2020	qualitative review	artificial intelligence	finance	x	x				-	

COUNT  
COUNT  
COUNT

x and (x)	14	25	11	1	4		
- and (-)						12	3
+ and (+)						0	1

**Appendix 2: Rating explanation**

The rating for the categories “skills”<sup>7</sup> and “organization” as mentioned in appendix 1 is described below. For category skills a “x” describes that this skill is explicitly mentioned to be improved for finance professionals. A “(x)” is implicitly derived by the author of this study. For category organization a “+” means increase, a “-“ means a decrease and blank space means no changes to current situation.

SKILLS	
Skill Category	Description
Professional	Professional qualification and experience Market and business orientation
Data science	Data analytics and statistics Programming
IT	Digital competence and understanding
Methodological	Analytical Problem solving
Soft	Communication and presentation Entrepreneurial thinking
ORGANISATION	
Organisation Category	Description
Size	Changes in size of finance organisations regarding number of employees
Impact	Impact of finance department on the organisation

<sup>7</sup> The category «skills» is mainly derived from the study performed by Oesterreich et al. (2019).

## The Influence of Selected Determinants on the Composition of the Financial Structure in Retail and Wholesale Companies from Selected Countries of Central and Eastern Europe

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### Abstract

Each economic entity uses a variety of sources to fund its activities, and therefore each entity has its own specific financial structure. The ratio of own and debt financing sources is one of the important indicators of corporate finance. Research and search for the optimal financial structure has been the subject of researches for over half a century, as the determination of the financial structure is influenced by a large number of determinants that must be considered. This research builds on previous studies and seeks to expand knowledge in the field of capital/financial structure and its determination. Retail and wholesale companies are the subjects of the research involving eight economies of Central and Eastern Europe. The companies are divided into medium and (very) large, with a total of 117,111 companies analyzed during the period 2010–2018. The aim of the research is to find out whether profitability, liquidity, asset structure, non-debt tax shield, GDP growth rate, reference interest rate and inflation rate affect the amount of total, long-term and short-term debt. The Generalized Method of Moments was chosen to achieve this aim. Unfortunately, the examined data set is extensive thus it is not possible to summarize the results for each economy or variable; the main conclusion can be drawn though that external determinants have the greatest impact on the retail and wholesale companies' indebtedness level. Specifically, the development of the economy and the level of the reference interest rate.

### Keywords

Asset structure, financial structure, GDP, inflation rate, interest rate, liquidity, non-debt tax shield, profitability

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## 1. Introduction

There are two very important concepts in corporate finance theory relating to financial sources, namely capital and financial structure. The difference between those two terms is only in maturity – the financial structure includes all financial resources while the capital structure includes only long-term financial resources. Initial research related to this area can be found very early in the beginning of the last century, when economists began to ask the question “what is the right ratio between own and debt funding sources?”. Even today, several decades away, no one can clearly answer the question. Myers (2001) points out that reason for that may be an existence of a myriad of determinants influencing the financial structure formation as well as a selection of specific funding sources.

The diversity of previous results became the motivation for this research aiming at determination whether profitability, liquidity, asset structure, non-debt tax shield, GDP growth rate, reference interest rate and inflation rate affect the overall, long-term and short-term indebtedness of retail and wholesale companies of eight selected economies of Central and Eastern Europe. As the following chapter suggests, the results vary widely with respect to company size, industry, geography, and sample size. The dissemination of knowledge in this area should become this research benefit, given the sample size, which includes over 117,000 companies in the industry. Companies are divided by size into medium and large; a comparison between sizes being not often analyzed is also a part of this research. After this more detailed analysis, the results can be applied directly to these companies in the given economies.

This article is organized as follows. Section 1 summarizes earlier studies on the financial structure and determinants suggested by these studies. Section 2 presents the research methodology, data, and variables and provides a description of the industry and examined economies. Here we also find the input analysis of the endogenous variable. Section 3 describes the results of the analysis of variable dependencies. Section 4 presents the conclusions.

## 2. Literature Overview

As mentioned in the introduction, decisions about the funds structure accompany the company within each stage of its life cycle; therefore, it is an important area of corporate finances. At the same time, this decision-making is influenced by countless determinants being divided into internal and external ones. Internal determinants are related to conditions in a particular company, while external determinants affect the company from the outside. This research deals with both groups of determinants. Internal determinants are represented by profitability, liquidity, asset structure and non-debt tax shield of the given companies, while external determinants are represented by the development of the GDP growth rate, the inflation rate and the reference interest rate of individual economies. In the following section, brief assumptions and previous studies for individual factors will be gradually mentioned. Before searching the literature, it is worth mentioning that all determinants can have a positive and negative impact on the debt level.

The impact of profitability is usually assessed from the perspective of two basic theories of capital structure. Brealey et al. (2011) and trade-off theory argue that if companies are more profitable, their financial distress costs decrease reducing the probability of bankruptcy and making companies suitable for lending from a lender's perspective. While Myers (1984) and pecking order theory take the view that as profits grow, other parts such as retained earnings, which are a very cheap mean of financing, grow as well. A positive impact can be found, for example, in the studies of Pinková (2012), Aulová and Hlavsa (2013) and Mokhova and Zinecker (2013) for Slovenian companies. More frequent negative effects can be found, for example, in Weill (2004), Črnigoj and Mramor (2009), Hernádi and Ormos (2012), Jõeveer (2013), Mateev et al. (2012), Mokhova and Zinecker (2013), Prędkiewicz and Prędkiewicz (2015), Růčková (2015, 2017) for Poland and Slovakia.

The positive relationship between liquidity and indebtedness is explained by the example of a company entering an existential crisis. In such a case, highly liquid assets would be good for company to have because those could be monetized almost immediately (although with a certain loss) and thus the bankruptcy could be prevented. For this reason, it is desirable for each company to have a certain amount of such assets that could be used in the event of problems. Unfortunately, illiquid assets (e.g. patents, licenses, goodwill) are very difficult to sell and, in some cases, the whole company has to be sold. The negative relationship between the variables is clarified by a conflict the emergence between owners and managers, who, if they could dispose of corporate assets freely, could gradually expropriate the owners. The positive relationship is confirmed in studies by e.g. Williamson (1988), Shleifer and Vishny (1992), Mateev et al. (2012) for long-term debt, Růčková (2015) for the Czech Republic. A negative relationship was revealed, for example, by Myers and Rajan (1998), Morellec (2001), Frieder and Martell (2006), De Jong et al. (2008), Lipson and Mortal (2009), Mateev et al. (2012) for short-term debt, Pinková (2012), Aulová and Hlavsa (2013), Růčková (2015) for Poland and Slovakia.

The asset structure impact on the indebtedness level depends on the maturity – a positive impact is assumed for long-term debt, while a negative impact is assumed for short-term debt. These assumptions have been found in studies by e.g. Nivorozhkin (2002), Mateev et al. (2012), Prášilová (2012), Mokhova and Zinecker (2013) for Bulgaria, Hungary and Slovenia. A number of variables that characterize the structure of assets can be used to determine the impact of this variable on the level of indebtedness. The most common of these variables is the share of tangible fixed and total assets, and it is this variable that explains the initial assumptions. Tangible fixed assets are the assets that can be used as collateral when applying for a loan. Usually, these assets are used as collateral for long-term loans, and therefore, if a company had a larger amount of them, the volume of its long-term debt could increase.

The non-debt tax shield is considered an alternative to the interest tax shield and as its counterpart it should reduce the indebtedness level. The negative effect on the indebtedness level was confirmed in studies by Michaelas et al. (1999) for long-term debt, Hernádi and Ormos (2012). A positive effect on the indebtedness level was revealed in studies by e.g. Aulová and Hlavsa (2013) and Mokhova and Zinecker (2013). This effect is explained by different tax regulations in selected economies or by the equality of depreciation values and tangible fixed assets.

The impact of GDP growth is linked to the economic cycle – when the economy thrives, all economic subjects usually thrive, companies make profits and lenders are willing to lend to almost everyone. This has a positive impact on the indebtedness level. However, a negative impact can also become the result, which is associated with the profitability growth, while growing profits can be used as a financing source instead of debt financing. The positive effect was confirmed by e.g. Gajurel (2006) for long-term debt, Yinusa et al. (2017) for long-term debt. A negative impact can be found in e.g. Gajurel (2006) for total and short-term debt, Cheng and Shiu (2007), Bokpin (2009), Jõeveer (2013) for unlisted companies.

The effect of the inflation rate is closely linked to the interest rate, as the inflation rate reduces the value of existing debt, as the inflation rate causes a decline in the real interest rate. A negative effect can be found in e.g. Gajurel (2006) for total debt, Cheng and Shiu (2007), Jõeveer (2013), Mokhova and Zinecker (2014) for France and the Czech Republic. The positive effect of the inflation rate is associated with short-term indebtedness, as creditors can insure themselves against the risk of rising inflation, e.g. by linking interest rates to inflation, risk premiums, etc. However, this insurance only works in the short term. A positive effect was revealed by e.g. Mokhova and Zinecker (2014) for France, Yinusa et al. (2017).

In the case of the reference interest rate, a completely logical negative impact on debt is expected. This is due to the fact that the lower the costs associated with debt financing, the more debt financing companies would demand. However, Yinusa et al. (2017) found in their study that the effect of interest rates may also occur when the economy is developing. The authors found that developed countries will show a positive bond and developing countries will show a negative bond. The difference between these countries in terms of the quality of the institutional, legal and regulatory environment is the reason for such different bonds.

The results for external determinants are often statistically insignificant. Therefore, it is important to include these determinants in research in order to obtain more relevant statistically significant results.

### **3. Data and Methodology**

This research focuses on companies operating in the economies of the extended Visegrád Group: the Czech Republic (CZ), Slovakia (SK), Poland (PL), Hungary (HU), Austria (AT), Slovenia (SI), Romania (RO) and Bulgaria (BG). The last four mentioned economies are very often associated with the original Visegrád Group, as representatives of these economies often attend the group's meetings and participate in some common policies (e.g. territorial development, climate).

The subject of the research are companies belonging according to the NACE classification to branch section G – Wholesale and retail trade; repair of motor vehicles and motorcycles. This section includes wholesale and retail – purchase and sale without further processing of any kind of goods and the provision of services related to the sale of goods – i.e. the latest parts in the distribution of goods. This section also includes maintenance and repairs of motor vehicles and motorcycles, which is not analyzed in this research. Sales without further processing include trade-related activities, such as sorting, classifying and assembling goods,

mixing goods, such as sanding, bottling (with or without pre-washing), packaging, unpacking and repackaging for subdivision, storage (including freezing or refrigeration).

Division 45 includes all activities related to the trade and repair of motor vehicles and motorcycles. Divisions 46 and 47 include all other business activities. The predominant type of customers is decisive for the distinction of these divisions, where Division 46 deals with customers, who are mostly business entities, while Division 47 includes end consumers.

These are all companies of the Orbis database, which includes medium, large and very large companies. A total of 117,111 companies have been tested. The individual time series come from the Orbis database (financial statements of companies), the World Bank database (GDP, inflation) and the database of central banks of selected economies (reference interest rate). The analyzed period includes the years 2010–2018.

The aim of the research is to find out whether profitability, liquidity, asset structure, non-debt tax shield, GDP growth rate, reference interest rate and inflation rate affect the amount of total, long-term and short-term debt. With regard to the formulated aim and literature overview, two research questions are formulated:

1. Are there differences in terms of the influence of selected determinants if the used sources of financing have different maturity length?
2. Does the price of financial external sources affect the use of them?

The Table 1 shows the assumed links based on a literature overview.

*Table1: Expected relationships between selected determinants and forms of debt*

	Total debt	Long-term debt	Short-term debt
Profitability	-	-	-
Liquidity	-	-	-
Asset structure	-/+	+	-
Non-debt tax shield	-	-	-
Inflation rate	-/+	-	+
GDP growth rate	-/+	+	-
Interest rate	-	-	-

Source: author's calculations

### 3.1. Methodology

A number of econometric methods can be used to determine the influence of selected determinants on the indebtedness level; however, panel regression is the most suitable for such a large sample of data. In this research, the two-stage Generalized Method of Moments (GMM) system was chosen eliminating shortcomings of many other methods and models; therefore, it is very often used in finance (Jagannathan et al., 2002).

For the first time, this system was introduced in the study of Arellano and Bond (1991) and subsequently developed in the studies of Arellano and Bover (1995) and Blundell and Bond (1998). A summary of the basic characteristics of this system can be found in the Roodman

study (2009): suitability for shorter time series; existence linear functional relationship; presence of fixed individual effects; the dependent variable on the left side of the equation is dynamic and depends on its lagged values; independent variables do not have to be strictly independent, which means that the variables can be correlated with past and present errors; autocorrelation and heteroskedasticity should not be through observation (both of these phenomena cannot be tested in this method). The GMM method eliminates the endogeneity problem (correlation between exogenous variable and error term). Ullah et al. (2018) state that this problem is solved by e.g. means of internal tools eliminating unobserved heterogeneity, simultaneity and dynamic endogeneity, which are mentioned as sources of endogeneity.

As already mentioned, heteroskedasticity and autocorrelation of variables cannot be tested in this type of panel regression. Therefore, it is necessary to use some tool that tests the credibility of the model. There are several tools that can be used – e.g. the Hansen or Sargan test. The second mentioned test is used in this research. The results of this test specifically show the extent to which the model is able to provide almost the same results even if we slightly change its parameters. The model is built correctly if its resulting values are higher than 0.05.

The equation of the model looks like this:

$$Y_{it} = \alpha_0 + \beta_1 * Y_{it-1} + \beta_2 * ROE_{it} + \beta_3 * L2_{it} + \beta_4 * SA_{it} + \beta_5 * NDT S_{it} + \beta_6 * GDP_{it} + \beta_7 * INF_{it} + \beta_8 * IR_{it} + \varepsilon_{it}; \quad (1)$$

where  $Y_{it}$  represents an endogenous variable, i.e. some form of indebtedness of the  $i$ -th number of companies in the given economy in the selected sector for the period 2010–2018. Exogenous variables denoting individual determinants are in the coefficients  $\beta_1$ – $\beta_8$ . Among the exogenous variables is also  $Y_{it-1}$ , which is automatic part of the model and allows modeling of the mechanism of partial adaptation in a dynamic model. This variable indicates the lagged value of the endogenous variable and the specific lag is one year, as all data are on an annual frequency. The last variables are the symbols  $\alpha$  and  $\varepsilon$ , which are also an automatic part of the model and represent the constant and the random component of the model. The random component contains all other determinants of the financial structure, which the research does not deal with and cannot be neglected.

### 3.2. Variables

In the panel regression equation, which was discussed in the previous subchapter, the abbreviations of the variables were given, which are to be briefly addressed in this subchapter. The endogenous variable has three forms for the already mentioned three forms of indebtedness. Total debt (DER) is the ratio of total liabilities to equity. Long-term debt (DER\_L) is formed by the ratio of long-term liabilities and equity. Short-term debt (DER\_S) is the ratio of short-term liabilities and equity. What specifically belongs to the individual liabilities will be discussed in the following subchapter dealing with debt analysis.

The selected six determinants present exogenous variables. Profitability (ROE) is the ratio of pre-tax profit and interest and equity to be abstracted from diverse taxation in selected economies. Quick ratio (L2) is the share of current assets excluding inventories and current liabilities. The structure of assets (SA) is the ratio of tangible fixed to total assets. Non-debt tax shield (NDTS) is the ratio of depreciation and total assets. The macroeconomic determinants are the GDP growth rate at market prices, the inflation rate (INF) and the reference interest rate of the economy (IR).

### **3.3. The amount and composition of liabilities and capital structure in individual economies**

Before we get to the analysis of the resulting relationships between the determinants and the debt amount, it is appropriate to perform an analysis of the debt itself. Figure 1 shows the average values for medium and large companies in terms of non-current liabilities, current liabilities, debt, equity and debt-equity ratio.

Non-current liabilities (NCL) include long term liabilities of the company, which consist of long-term financial debts (e.g. loans, credits, bonds), other long-term liabilities (trade debts, group companies, pension loans, etc.), provisions (social security, taxes, etc.) and deferred taxes. Current liabilities (CL) consist of loans (e.g. to credit institutions, part of long-term financial debts payable within the year, bonds, etc.), debts to suppliers and contractors (trade creditors), and other current liabilities (pension, personnel costs, taxes, intragroup debts, accounts received in advance, etc.). Debt is then the sum of the non-current and current liabilities. Equity includes capital and other shareholders funds.

Figure 1 shows that in terms of the liabilities composition, for all companies except Austrian ones (regardless of size), short-term liabilities clearly predominate, accounting on average around 82 % of total liabilities for retail companies and 73 % for wholesale companies. However, there are exceptions, namely Austrian companies, which are dominated by long-term liabilities.

Figure 1: The composition of liabilities and the debt-equity ratio in individual countries

	CZ	SK	PL	HU	AT	SI	BG	RO
NCL_46_medium (%)	15	20	17	15	97	27	25	19
NCL_46_large (%)	10	13	17	17	92	20	25	11
NCL_47_medium (%)	27	23	22	20	96	31	32	22
NCL_47_large (%)	24	27	31	24	90	40	34	25
CL_46_medium (%)	85	80	83	85	3	73	75	81
CL_46_large (%)	90	87	83	83	8	80	75	89
CL_47_medium (%)	73	77	78	80	4	69	68	78
CL_47_large (%)	76	73	69	76	10	60	66	75
Debt_46_medium (%)	51	66	55	53	63	57	59	68
Debt_46_large (%)	57	66	58	59	61	61	60	69
Debt_47_medium (%)	60	75	62	54	65	60	61	69
Debt_47_large (%)	59	54	58	59	66	63	50	60
Equity_46_medium (%)	49	34	45	47	37	43	41	32
Equity_46_large (%)	43	34	42	41	39	39	40	31
Equity_47_medium (%)	40	25	38	46	35	40	39	31
Equity_48_large (%)	41	46	42	41	34	37	50	40
Debt-equity ratio_46_medium	1.04	1.91	1.23	1.11	1.72	1.32	1.44	2.08
Debt-equity ratio_46_large	1.31	1.91	1.36	1.42	1.55	1.54	1.48	2.21
Debt-equity ratio_47_medium	1.49	3.01	1.62	1.16	1.88	1.47	1.56	2.25
Debt-equity ratio_47_large	1.45	1.19	1.39	1.45	1.96	1.72	1.01	1.48

Source: author's calculations based on the data of Orbis database

When we look at corporate indebtedness, we see that the values in all economies exceed the warning values of debt-equity ratio = 1, which means that external sources contribute to the financing of the company to a greater extent than equity. This fact can also be verified by the values of equity and debt, from which it is clear that equity is in all cases higher than 50 %. Although all companies exceed the critical value 1 in the case of the debt-equity ratio according to the literature, some companies slightly exceed this value (e.g. Czech medium-sized retail companies – 1.04 and Bulgarian large wholesale companies – 1.01) and some companies significantly (e.g. Romanian medium and large retail companies – 2.08 and 2.21, Slovak and Romanian medium wholesale companies – 3.01 and 2.25). However, it cannot be said that a higher ratio is bad, as it always depends on the company's strategy, which, at such values, can be very aggressive and does not necessarily mean financial problems. Also, higher indebtedness can mean cheaper funding sources, which can bring excessive profits.

#### 4. Research Results and Discussion

Figures 2, 3, 4 and 5 show the resulting GMM coefficients for medium and large retail and wholesale companies for the three forms of debt. Complete results for all economies and determinants are not available for any form of debt. The missing determinants were not statistically significant and the models of the missing economies did not meet the condition of the Sargan test, and thus the J-stat values were lower than 0.05 and the resulting models are not trusted and were therefore deleted from the tables.

In the first column we can see the coefficients for the lagged value of the dependent variable, which is an automatic part of the GMM model. We see that most of these coefficients are statistically significant and, at the same time, strongly outweigh the positive impact, which means that if companies used debt financing in the previous period, they are likely to use it in the following period, which will increase debt. On the contrary, the negative impact means that if debt financing was used in the previous period, it will no longer be used or will be used to a much lesser extent in the following period. On the other hand, the coefficients are so low that we cannot practically talk about any impact. We can only speak about a debt movement indication if the values of the coefficients were higher than thousands, hundredths or tenths.

Figure 2: GMM results for medium-sized retail companies

Medium-sized companies								
Total debt								
	DER(-1)	ROE	L2	SA	NDTS	GDP	INF	IR
SK	-0.004 <sup>a</sup>	-31.365 <sup>a</sup>		15.727 <sup>a</sup>			80.595 <sup>a</sup>	1,195.839 <sup>c</sup>
PL	0.038 <sup>a</sup>		-0.002 <sup>a</sup>	2.340 <sup>b</sup>		13.524 <sup>a</sup>		-15.300 <sup>a</sup>
AT	0.022 <sup>a</sup>		-0.010 <sup>c</sup>		-23.116 <sup>a</sup>		-75.918 <sup>a</sup>	
SI		0.770 <sup>a</sup>		6.562 <sup>a</sup>		27.397 <sup>b</sup>		-22.714 <sup>a</sup>
RO	-0.046 <sup>a</sup>	-4.012 <sup>a</sup>			0.301 <sup>c</sup>		272.156 <sup>b</sup>	-685.978 <sup>b</sup>
Long-term debt								
CZ	0.041 <sup>a</sup>	0.588 <sup>a</sup>	0.005 <sup>a</sup>	-0.308 <sup>a</sup>			-3.678 <sup>a</sup>	6.303 <sup>a</sup>
PL	0.012 <sup>a</sup>		0.001 <sup>b</sup>		-0.295 <sup>c</sup>	4.230 <sup>a</sup>		
HU	-0.269 <sup>a</sup>			-0.370 <sup>a</sup>		1.476 <sup>a</sup>		-0.397 <sup>a</sup>
AT	0.023 <sup>a</sup>	-1.344 <sup>c</sup>		-2.705 <sup>a</sup>		-34.075 <sup>a</sup>		153.376 <sup>a</sup>
SI	0.781 <sup>a</sup>	0.494 <sup>a</sup>	0.026 <sup>a</sup>				1.838 <sup>b</sup>	
BG	0.147 <sup>a</sup>			-0.949 <sup>c</sup>	-1.961 <sup>a</sup>	-5.183 <sup>a</sup>		-97.111 <sup>a</sup>
Short-term debt								
SK		-13.310 <sup>a</sup>			-0.470 <sup>a</sup>	-64.470 <sup>a</sup>		-826.856 <sup>c</sup>
PL	0.048 <sup>b</sup>	1.630 <sup>b</sup>		0.446 <sup>a</sup>		7.597 <sup>a</sup>	14.196 <sup>a</sup>	
SI			-0.002 <sup>c</sup>	6.830 <sup>a</sup>	-0.104 <sup>a</sup>	15.385 <sup>c</sup>		
RO	-0.063 <sup>a</sup>	-3.443 <sup>a</sup>			0.265 <sup>c</sup>	-224.351 <sup>c</sup>		

Source: author's calculations based on data of Orbis databases

Symbols <sup>a</sup>, <sup>b</sup>, or <sup>c</sup> indicate significance at 1 %, 5 %, or 10 %.

Profitability was expected to have a negative impact on all forms of indebtedness; however, positive values of coefficients can also be found. The companies that did not meet the negative expectations are the following: Slovenian, Polish and Czech medium-sized and large Polish and Hungarian retail companies, Polish and Romanian medium-sized and large Romanian wholesale companies. At the same time, in all these cases, the results are in line with the coefficients for the impact of macroeconomic development, which were also positive. These results mean that in times of economic prosperity, companies prefer to use debt financing for their investment activities, as in these times lenders are willing to lend to virtually anyone, usually at lower debt financing costs than in times of economic recession. At the same time, if the economy prospers, corporate profits usually increase indicating that the company is profitable and not on the verge of bankruptcy and thus, once again, becomes attractive to creditors. The Polish economy, as one of the few economies in the world, was not affected by any of the economic events and grew by an average of 3.6 % per year, so creditors did not have to worry and borrowed, and businesses did not have to worry about future development

too much. The remaining economies underwent some economic downturns. However, since 2014, all economies have achieved excellent year-on-year GDP growth, thus outweighed the negative effects from the beginning of the period and companies took advantage of the creditors' willingness. On the other hand, companies that met negative expectations despite the good economic development of their economies preferred the use of equity (e.g. growing retained earnings) to finance their debts. These results are also in line with the results for macroeconomic development. Basically, this decision was wise as a gradual reduction in indebtedness would help companies to avoid potential huge problems within the future economic recessions or crises. However, the use of equity only can lead to limited investment activities and limited future profits.

As the results for macroeconomic development were analyzed together with profitability, several coefficients for this variable remain that have not been explained. These are Hungarian and Bulgarian medium-sized companies and large Austrian retail companies, large Czech and Slovenian wholesale companies. In all economies except Bulgarian ones, the coefficients were positive. Bulgarian companies showed a negative coefficient. An explanation of the resulting impacts was described for profitability. However, none of the results is a surprise given the good economic development at least in the second half of the period under review. Although the Bulgarian economy contracted as a result of the crisis, it was also one of the few economies to recover very quickly from the crisis and did not have to apply for any international loan contrary to the neighboring economy, Romania.

Figure 3: GMM for large and very large retail companies

Large companies								
Total debt								
	DER(-1)	ROE	L2	SA	NDTS	GDP	INF	IR
CZ	0.046 <sup>a</sup>			5.889 <sup>a</sup>	-3.181 <sup>b</sup>		34.349 <sup>a</sup>	
PL	0.020 <sup>a</sup>		0.001 <sup>c</sup>	1.732 <sup>a</sup>		18.477 <sup>b</sup>		-5.506 <sup>a</sup>
HU	0.215 <sup>a</sup>	27.519 <sup>a</sup>			-125.939 <sup>b</sup>	1,098.518 <sup>a</sup>		1,124.056 <sup>b</sup>
BG		-8.139 <sup>a</sup>	-0.001 <sup>a</sup>			-11.148 <sup>a</sup>		860.361 <sup>b</sup>
RO	0.056 <sup>a</sup>			0.617 <sup>a</sup>	-1.200 <sup>a</sup>		60.449 <sup>c</sup>	
Long-term debt								
SK	0.616 <sup>a</sup>	-1.859 <sup>a</sup>		-8.359 <sup>b</sup>	-21.719 <sup>a</sup>	-213.119 <sup>b</sup>		1,346.737 <sup>a</sup>
PL			0.002 <sup>c</sup>		-2.617 <sup>c</sup>		-1.574 <sup>a</sup>	
RO	-0.013 <sup>a</sup>	-3.232 <sup>a</sup>		-2.717 <sup>b</sup>			-12.172 <sup>c</sup>	-103.469 <sup>b</sup>
Short-term debt								
CZ	0.030 <sup>a</sup>	-4.103 <sup>a</sup>	0.004 <sup>a</sup>			-4.191 <sup>b</sup>		-39.247 <sup>a</sup>
PL		1.168 <sup>a</sup>		4.521 <sup>a</sup>	4.965 <sup>c</sup>		6.978 <sup>a</sup>	
AT	0.053 <sup>a</sup>		0.007 <sup>a</sup>			89.808 <sup>a</sup>		-496.777 <sup>a</sup>
SI			0.025 <sup>a</sup>	21.467 <sup>a</sup>	-59.046 <sup>a</sup>		62.433 <sup>a</sup>	89.845 <sup>b</sup>
BG	0.028 <sup>a</sup>	-7.773 <sup>a</sup>			-13.043 <sup>a</sup>		41.450 <sup>b</sup>	
RO	0.057 <sup>a</sup>	-6.355 <sup>a</sup>	-0.030 <sup>b</sup>			-46.574 <sup>b</sup>	48.560 <sup>c</sup>	

Symbols <sup>a</sup>, <sup>b</sup>, or <sup>c</sup> indicate significance at 1 %, 5 %, or 10 %.

Source: author's calculations based on data of Orbis databases

Liquidity results vary according to subindustry affiliation – in the case of retail companies, the positive effect on the indebtedness level prevails, while in the case of wholesale companies, the negative impact on the indebtedness level prevails. Unfortunately, similarly to the lagged

value of debt, in this case the coefficients are very low; therefore, the effect of liquidity on the debt level cannot be discussed. The positive coefficients being seen in the figures are more interesting in terms of results as this could mean that these companies may have a larger volume of liquid assets. Unfortunately, the Orbis database does not allow a detailed look in order to see whether this is true, but if we look only at the composition of assets (their division into fixed and current), we find that about X % of assets are current assets, which certainly belong to more liquid assets. The percentage is high, so the positive effect has its justification in these economies.

The structure of assets is usually expected to have a positive effect on the amount of long-term debt and a negative effect on the amount of short-term debt. As for total debt, it depends on the predominant type of debt. In all economies except Austria, short-term debt predominates and therefore, the coefficients for total debt should be negative. However, our results are very diverse, but could be explained by the ratio of tangible fixed assets to total assets. Figure 3 for large retail companies revealed negative coefficients for all results. All these coefficients can be explained by the fact that the companies have relatively few tangible fixed assets available to be used as collateral for further debt financing. The average ratios for the given economies are in the range of 11–21 %. Therefore, these companies cannot benefit much from the benefits of long-term debt collateral. However, a number of intangible fixed assets are actually used as collateral for short-term debt, where we see a positive effect. The situation is similar for medium-sized retail companies – see the Figure 2. For these companies, the average ratios of tangible fixed and total assets are again relatively low in the range of 15–27 %. The situation is slightly different for wholesale companies as especially for large companies (except Austrian ones), almost half of total assets are tangible fixed assets, which can increase long-term debt. The average ratios for medium-sized companies move in the range of 25–39 % and for large companies in the range of 22–55 %.

Figure 4: GMM results for medium-sized wholesale companies

Medium-sized companies								
Total debt								
	DER(-1)	ROE	L2	SA	NDTS	GDP	INF	IR
CZ	-0.090 <sup>a</sup>		-0.001 <sup>a</sup>			-10.388 <sup>a</sup>	149.231 <sup>b</sup>	
PL	0.032 <sup>a</sup>	0.879 <sup>a</sup>		2.070 <sup>a</sup>			66.874 <sup>b</sup>	-76.986 <sup>c</sup>
HU				3.601 <sup>b</sup>	-7.039 <sup>c</sup>	-15.084 <sup>a</sup>		-79.207 <sup>a</sup>
BG	0.141 <sup>a</sup>		-0.001 <sup>a</sup>		-9.221 <sup>b</sup>	-5.948 <sup>a</sup>		
Long-term debt								
CZ	-0.094 <sup>a</sup>	-4.349 <sup>a</sup>				-7.385 <sup>a</sup>	-19.773 <sup>b</sup>	70.984 <sup>a</sup>
PL	0.044 <sup>a</sup>		-0.003 <sup>a</sup>	2.922 <sup>a</sup>		9.012 <sup>b</sup>		
HU	0.015 <sup>a</sup>		0.001 <sup>a</sup>		-0.526 <sup>a</sup>		-31.851 <sup>a</sup>	-56.256 <sup>c</sup>
AT	0.010 <sup>a</sup>	-0.466 <sup>a</sup>				-116.005 <sup>a</sup>		352.725 <sup>c</sup>
BG		-1.076 <sup>a</sup>		-1.590 <sup>b</sup>			-2.598 <sup>a</sup>	
RO	0.006 <sup>a</sup>	0.153 <sup>a</sup>		8.341 <sup>a</sup>		1.022 <sup>a</sup>	-9.206 <sup>b</sup>	
Short-term debt								
CZ	-0.085 <sup>a</sup>	-10.238 <sup>a</sup>		4.483 <sup>c</sup>	12.680 <sup>a</sup>			
SK		-2.250 <sup>a</sup>	-0.002 <sup>a</sup>			-33.943 <sup>a</sup>	117.808 <sup>c</sup>	-384.656 <sup>a</sup>
PL	0.029 <sup>a</sup>		-0.010 <sup>a</sup>		-5.376 <sup>a</sup>	22.863 <sup>b</sup>	50.652 <sup>b</sup>	
HU		-1.755 <sup>a</sup>	-0.001 <sup>a</sup>		-5.465 <sup>c</sup>			
SI	-0.002 <sup>a</sup>	-4.917 <sup>a</sup>		5.239 <sup>b</sup>		-18.237 <sup>a</sup>	30.831 <sup>a</sup>	58.397 <sup>a</sup>
BG	0.297 <sup>a</sup>			3.568 <sup>b</sup>			6.012 <sup>a</sup>	382.524 <sup>a</sup>

Symbols <sup>a</sup>, <sup>b</sup>, or <sup>c</sup> indicate significance at 1 %, 5 %, or 10 %.

Source: author's calculations based on data from Orbis databases

The non-debt tax shield should affect all companies negatively, which is confirmed by the results of all companies except medium-sized Romanian and large Polish retail companies, medium-sized Czech and large Slovak wholesale companies. Companies with negative coefficients take advantage of depreciation, which reduces their indebtedness. At the same time, these companies should regularly buy and exchange assets that have higher depreciation rates in order to achieve even higher benefits. For companies with a positive impact on the debt level, it is necessary to look at the value of depreciation and the value of tangible fixed assets. For comparison, we calculated the ratio of these two values to total assets and concluded that the ratio of tangible fixed assets/total assets is about nine times higher than the ratio of depreciation/total assets.

Given that the values of depreciation and the values of tangible fixed assets are very far apart, the explanation cannot be used that these two groups of assets are almost equal and that it is more advantageous for companies to use collateral than a non-debt tax shield. Therefore, the explanation could be found in the differences in tax regulations, as we do not have detailed internal accounting of all companies in which the answer could probably be traced.

Regarding the effects of the inflation rate on the indebtedness level, a negative impact was expected for long-term debt, while a positive impact was expected for short-term debt. For total debt, it depends on the predominant type of debt. In all economies except Austria, short-term debt predominates and therefore, the coefficients for total debt should be positive. For Austrian companies, the coefficients should be negative for total debt, which we can see for e.g. medium-sized retail companies. The remaining results more or less meet these expectations. Romania achieved the highest inflation rate of the examined countries during the period under review, averaging 2.7 %, and even 4.8 % during the period 2010–2013. It follows that higher inflation could have the advantage of cheaper debt (applies to long-term debt). While in the case of short-term debt, credit insurance for creditors was likely to be in place as evidenced by the positive impact. The same explanation can be applied to Hungarian companies, which operated in economy with an average inflation rate of 2.4 % and during the period 2010–2013 even of 4 %. Considering the remaining economies, it is more difficult to explain the resulting impacts as these economies had average inflation rates in the range of 1.2–1.9 %, which is normal inflation rate. Even deflation often occurred in economies. For this variable, it would be appropriate to analyze companies by individual years, which would specify the direction of impact and could be better explained. In some economies, the inflation rate was higher than the average value e.g. in the case of the Polish economy in 2010, 2011, 2012; the Austrian economy in 2011 and 2012; Slovenian and Czech economies in 2012; Slovak economy in 2011 and 2012. The development of the inflation rate also reflected in the price of the products of selected companies, which subsequently influenced companies through the profit levels, etc.

The last variable in the GMM model is the interest rate, which should have a negative impact on the debt level. This assumption is mostly met by Polish, Hungarian and Romanian companies. In these economies, interest rates were relatively high during the examined period. The Romanian interest rate averaged 3.6 %, the Hungarian 3.1 % and the Polish 2.5 %. However, the maxima in the first half of the examined period exceeded 5–6 %. High rates carry high debt acquisition costs, which reduced debt as companies preferred to avoid debt

financing. However, we find two exceptions in the case of large Hungarian companies, for which a positive relationship between variables was found. The deviation may be explained by the fact that interest rates fell to below 1 % at the end of the examined period, which may have led to an increase in debt and thus outweighed the majority negative effect from the beginning of the period. In the remaining economies, rates averaged around 0.3 %, indicating very low debt financing costs and explaining the positive effects in the remaining economies. Unfortunately, the negative effects are difficult to explain. Businesses probably didn't want to go into debt despite low interest rates in order to keep their probable economic prosperity as they could reduce their debt and prepare for worse times.

Figure 5: GMM for large and very large wholesale companies

Large companies								
Total debt								
	DER(-1)	ROE	L2	SA	NDTS	GDP	INF	IR
SK	-0.025 <sup>a</sup>			3.548 <sup>a</sup>	-1.172 <sup>a</sup>		87.434	
PL	0.012 <sup>a</sup>			1.511 <sup>a</sup>			82.648 <sup>b</sup>	-83.294 <sup>c</sup>
HU		-1.679 <sup>a</sup>		13.074 <sup>a</sup>		-92.253 <sup>a</sup>		12.816 <sup>b</sup>
BG		-1.680 <sup>a</sup>	0.014 <sup>a</sup>		-85.640 <sup>a</sup>	-65.782 <sup>a</sup>		
RO	0.019 <sup>a</sup>	6.323 <sup>a</sup>	0.015 <sup>a</sup>	9.370 <sup>b</sup>		70.895 <sup>a</sup>		-167.548 <sup>a</sup>
Long-term debt								
CZ	0.099 <sup>a</sup>			2.577 <sup>a</sup>		3.281 <sup>b</sup>	6.918 <sup>b</sup>	
AT	-0.014 <sup>a</sup>	-1.587 <sup>a</sup>		-19.274 <sup>a</sup>		-129.795 <sup>a</sup>		-311.434
SI	-0.001 <sup>a</sup>				-2.550 <sup>a</sup>	4.326 <sup>a</sup>	2.285 <sup>c</sup>	-1.074 <sup>b</sup>
RO			0.092 <sup>a</sup>	5.053 <sup>a</sup>			16.206 <sup>a</sup>	
Short-term debt								
SK	0.001 <sup>c</sup>	-4.506 <sup>a</sup>			1.230 <sup>b</sup>	-129.768 <sup>a</sup>		-567.707 <sup>b</sup>
HU			0.114 <sup>a</sup>	12.531 <sup>a</sup>		-80.083 <sup>a</sup>	-54.450 <sup>b</sup>	
AT	-0.002 <sup>a</sup>	-17.666 <sup>b</sup>			-9.279 <sup>a</sup>		56.937 <sup>c</sup>	
BG	-0.016 <sup>a</sup>		-0.015 <sup>b</sup>		-74.849 <sup>a</sup>		78.804 <sup>a</sup>	-1,534.618 <sup>a</sup>

Symbols <sup>a</sup>, <sup>b</sup>, or <sup>c</sup> indicate significance at 1 %, 5 %, or 10 %.

Source: author's calculations based on data from Orbis databases

Regardless of the subindustry, the main finding is that the companies' indebtedness level in the retail and wholesale industry is most influenced by the external environment determinants (by the coefficients value). The number of coefficients for the influence of macroeconomic development slightly prevails; however, it is not possible to say exactly which determinant of the external environment has the most significant impact but high values are often affected by the reference interest rate, which is followed by macroeconomic developments.

## 5. Conclusions

This research analyzed the financial structure of companies of the retail and wholesale sectors and the determinants affecting this structure. Companies of the extended Visegrád Group – V4, Austria, Bulgaria, Romania and Slovenia became the subjects of the research. The financial structure of the companies was considered in the form of total, long-term and short-term

debt. Profitability, liquidity, asset structure, non-debt tax shield, GDP growth rate, inflation rate and the reference interest rate of each given economy were the selected determinants to be researched. A total of 117,111 companies were analyzed divided by the size into medium-sized and (very) large companies and the period 2010–2018 was considered. As for the research method, the Generalized Method of Moments was chosen.

The aim of the research was to find out whether profitability, liquidity, asset structure, non-debt tax shield, GDP growth rate, reference interest rate and inflation rate affect the level of total, long-term and short-term debt. With regard to the formulated aim and literature overview, two research questions were formulated:

1. Are there differences in terms of the influence of selected determinants if the used sources of financing have different maturity length?
2. Does the price of financial external sources affect the use of them?

As it comes to the impact of selected determinants, both internal and external determinants had an impact. However, the determinants of the external environment were of a stronger impact – economic development, the inflation rate and the reference interest rate. The strength of the impact was evaluated according to the resulting coefficients. Detailed results for individual determinants can be found in the previous chapter, where everything is summarized.

Final conclusion is that the indebtedness level of retail and wholesale companies was most influenced by the determinants of the companies' external environment. It is not possible to determine unambiguously which determinant has the most significant impact, as the coefficients vary by economies, subindustries and companies' size. However, high values are often affected by the reference interest rate, which is followed by macroeconomic development. Considering the coefficients, those related to the influence of macroeconomic development slightly predominates; however, the remaining two determinants are in close proximity. The results for the two external determinants just mentioned are to be briefly analyzed; the remaining results were discussed in more detail in the previous chapter.

The negative impact of the reference interest rate was found in most Polish, Hungarian and Romanian companies. In these economies, interest rates were relatively high during the period under review. The Romanian interest rate averaged 3.6 %, the Hungarian 3.1 % and the Polish 2.5 %. However, the maxima in the first half of the observed period exceeded 5–6 %. High rates carried high debt acquisition costs, which reduced debt as companies preferred to avoid debt financing. However, two exceptions were also found for large Hungarian companies, for which a positive relationship between variables was found. The deviation could be explained by the fact that interest rates fell to values even below 1 % at the end of the period under review, which could have led to an increase in debt and thus outweighed the majority negative effect from the beginning of the period. In the remaining economies, rates averaged around 0.3 %, which meant very low debt financing costs and explained the positive effects in the remaining economies. Unfortunately, the negative effects are difficult to explain. Businesses probably didn't want to go into debt despite low interest rates in order to keep their probable economic prosperity as they could reduce their debt and prepare for worse times.

In terms of macroeconomic development, medium-sized Slovenian, Polish, Hungarian and Czech and large Austrian, Polish and Hungarian retail companies, medium-sized Polish and Romanian and large Czech, Slovenian and Romanian wholesale companies showed a positive impact of this variable on the indebtedness level. In addition, this result was supported by the results of the profitability effect for most companies, which also had an unexpected positive impact. These results mean that in times of economic prosperity, companies preferred to use debt financing for their investment activities, as in these times lenders were willing to lend to virtually anyone, usually at lower debt financing costs than in times of economic recession. At the same time, if the economy prospers, corporate profits usually increase indicating that the company is profitable and not on the verge of bankruptcy, and thus once again becomes attractive to creditors. On the other hand, the negative impact of macroeconomic developments was revealed for medium-sized Slovak, Romanian, Austrian and Bulgarian and large Bulgarian, Slovak, Romanian and Czech retail companies, medium-sized Czech, Austrian, Bulgarian, Slovenian, Slovak and Hungarian and large Hungarian, Bulgarian, Austrian and Slovak wholesale companies. Also, most of these results were in line with the results for profitability. Such decision was wise as a gradual reduction in indebtedness would help companies to avoid potential huge problems in future economic recessions or crises. However, the use of only equity can lead to the limited investment activities as well as to the limited future profits.

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## Source of Value Creation: Technology or Human Added Value?

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### **Abstract**

The aim of the research is to examine how the relationship between the added value and the value of the tangible assets versus that resulted by human activity develops in a scientific and innovation park environment. The value generated by an enterprise typically relies either on personnel resources or mostly on technology (like fixed asset-based capital). The analysis examined the ratio of these two factors to each other among selected ecosystem environments in Hungary. The investigation was based on the turnover as an indicator reflecting the generated value, in comparison with which the volume of fixed assets and the ratio of personnel expenditure. The conclusion of the analysis is a model that points to certain features of combining the two factors along which a particular innovation ecosystem can be evaluated.

### **Keywords**

Science park, innovation ecosystem, added value, fixed assets, human capital, technology

## 1. Introduction and Outlook

In recent years, the concept of innovation ecosystems has become popular among the expanding related researches, typically with business and strategic origins (Gomes, et al., 2018). The innovation ecosystem is defined by several authors as a collaborative structure where companies can combine their offerings for a coherent, customer-oriented solution. The main roots of the concept are similar to certain elements of concept of business ecosystems, published by Moore (1993) and others. In contrast, Granstrand and Holgersson (2020) used a new definition of innovation ecosystems, according to which the innovation ecosystem is the innovative performance of actors, activities and products, as well as institutions and relationships, all of which are important for the innovative performance of the actors. The researches show a significant consistency in that they approach different ecosystems from the side of contributing to the capabilities of the efficiency of enterprises. This is a relevant point of view, since the basic goal of setting up businesses in their field of activity is to generate profits and results.

According to Pipkin and Fuentes (2017), the long-term growth and development goals of an organization constantly confront organizations with new challenges. Today, in global economies, businesses need to achieve higher and higher levels of productivity and grow in the global value chains. In this regard, it is clear to define what can be considered as to be the value. The overall business value philosophy provides a good basis, according to which the value is the amount that customers are willing to pay for the product or service offered by the company (McGee, 2014).

Profit level develops when the value created by the company exceeds the costs it needs to create. In order to create economic value, knowledge must be created as a key condition (Spencer, 2018). This knowledge creation is driven by the managers of enterprises, they operate with it for the success of the companies and apply it. Uncertainty is a necessary prerequisite for the knowledge and thinking, there is no knowledge increase without uncertainty. In line with this, Avazpour and Shirazi (2019) defined in their research that knowledge has become the most valuable engine of companies in recent decades. The role of knowledge in the era of the knowledge economy is very important, knowledge has become the most valuable success factor for competition. Some authors use the organizational capabilities of companies as a sustainability criterion for business, too (Bezerra, et al., 2019).

The source of corporate value creation is, by definition, the 'capital' on which the business activity of the organization is based. In a classic way, the basic sources of operational value creation processes are equipment-based capital (technology), real estate capital (the location, infrastructure), intellectual capital, which can be broken down into know-how (intangible capital) and personnel resources (human capital). These capital elements give the corporate operating environment that is ready to produce value, while outlining the range of factors that need to be examined in the related researches. While innovation ecosystems can be seen as cooperation systems of different actors, the conceptual framework cannot be separated from the innovation system of individual companies. The issue of corporate innovation management goes beyond the scope of this analysis, but as a related aspect, it is essential to mention it. The TIM (Total Innovation Management) described by Oingru, et al. (2007) gives a good overview of the topic. It is also important to point out that the individual resources and

the capital elements are not static, but change over time to time. According to Eisenhardt and Martin (2000), dynamic capabilities can be used not only to improve existing resource configurations, but also very often to develop new resource configurations in order to achieve long-term competitive advantages.

Against this background, the two main sources of value creation efforts of companies, the human (soft) side and the material (tangible asset) side, are relevant test criteria. This analysis aims to make findings on the subject on the basis of specific enterprise business report data, but overall at the level of an innovation ecosystem (system). The results of the research serve a foundational purpose, the intention of the conclusions is primarily to identify directions for further research on the subject.

## 2. Method of Research

With regard to innovation ecosystems, or collaborative systems in general, the question arises as to where the value creation of public entities, industrial actors and research institutes and other organizations comes from. In a classic way, the value can be produced by an organization by means of 'outcome of production', i.e. by means of an objectified nature (machines, labs, real estate, etc.) or soft assets (typically personnel, possibly based on intangible assets).

On this basis, the areas of tangible assets, intangible assets and personnel costs as accounting categories can be clearly examined. These three groups are the subject of this research, accepting that all of these three items have different characteristics but still reflects, in a way, the sources of value creation of an ecosystem.

During the research, 16 locations were selected in Hungary, the specificities of which were examined on the basis of the publicly available balance sheets and reports of their individual actors (a total of 756 organizations). Due to legal reasons, the examined ecosystems (including advanced industrial parks, technology parks, science parks, business incubators) are marked with numbering from 1 to 16.

Based on the audited accounts of each organization, the following balance sheet lines were analyzed in the years of 2017-2018-2019:

- tangible assets,
- intangible assets,
- personnel costs.

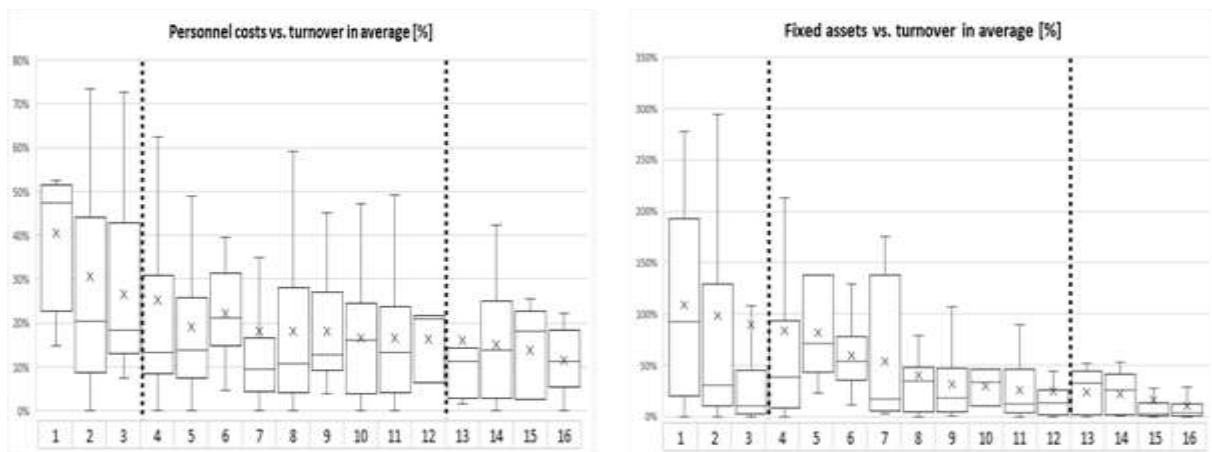
Based on the above explained introduction, this paper examines the following research questions:

- How dominant is the ratio of fixed assets compared to turnover?
- How dominant is the ratio of intangible assets compared to turnover?
- How dominant is the share of personnel resources compared to turnover?
- What is the relationship between these characteristics, what features can be defined?
- What can be concluded based on of all these examinations?

### 3. Results of the Research

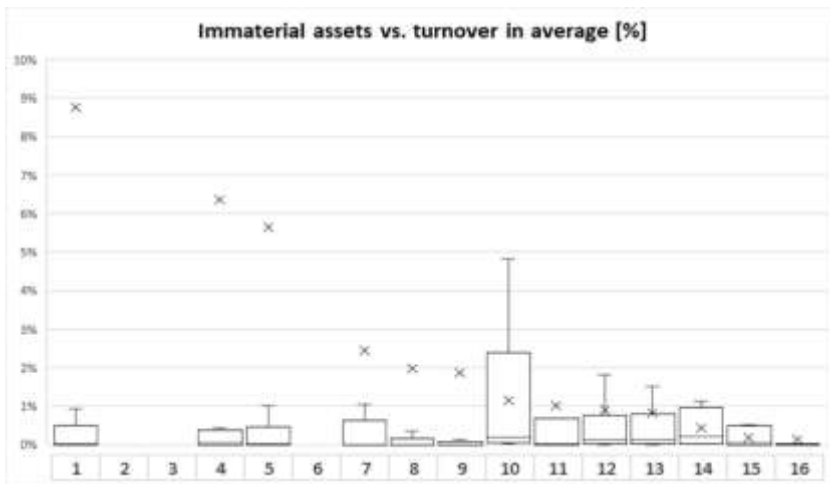
The data examined was plotted in a scatter diagram showing the 16 ecosystems on the horizontal axis. The vertical axis displays a specific feature of actors within different ecosystems as a result of statistical processing. Each data block shows the minimum and maximum values, the lower and upper quartiles, and the median value. The ecosystems are clustered based on their similar patterns, so that the following illustrations show the order of the data plots.

*Figure 1: Pattern of the ratio of personnel costs and fixed assets to the turnover*



The ratio of personnel costs to total turnover varies considerably from around 10% to 50%. In Figure 1, it is relatively difficult to distinguish between specific columns so as to be segmented well, but rather the two endpoints should be highlighted. There are ecosystems where up to half of the turnover is spent on personnel costs and there are also ecosystems where this is relatively low. The high personal cost may be related to higher value-added activities, supported by a low value in the figure showing the proportional development of the fixed asset. However, if the higher personnel cost is combined with a relatively significant tangible asset value, it may be more of a feature of for example, asset-sensitive industrial production. A remarkable trend is the low personal cost ratio with a significant asset pairing, which may also refer to a modern technological environment.

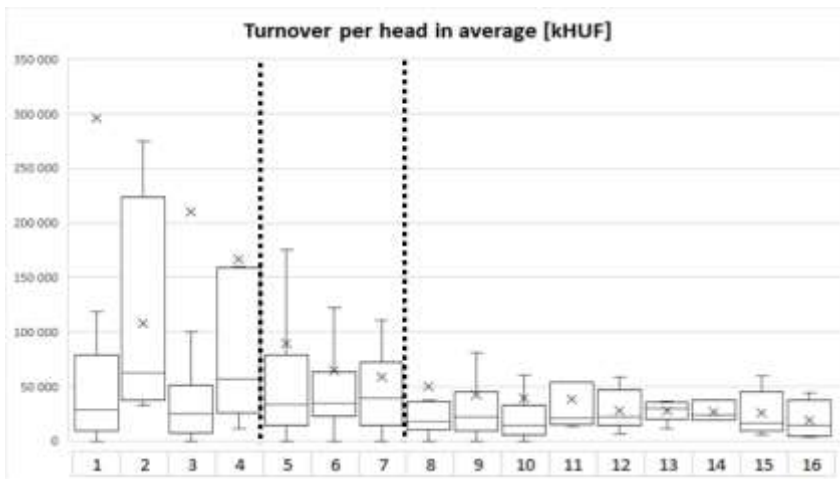
Figure 2: Pattern of the ratio of intangible assets



An interesting pattern is shown by the average ratio of intangible assets compared to the turnover as significant variance can be observed between ecosystems. Removing the outliers makes the chart easier to interpret, but still doesn't show a remarkable trend. In terms of absolute values, the ratio of intangible assets ranges from a few tenths of a percent to one percentage, which is a very low value. It is therefore difficult to draw relevant further conclusions from this.

The next aspect is the examination of turnover per capita, which, in the case of sustainable operation, refers to the revenue value generated by an employee (Figure 3).

Figure 3: Turnover per capita in different ecosystems



The examination of the development of turnover per capita shows that the more value produced with a limited standard deviation is more characteristic of smaller and/or brownfield parks, which can be seen on the right side of the figure. Classic industrial parks are located in the middle zone. On the left side of the diagram are either special industrial parks or those of science and innovation park ecosystems where the standard deviation is greater than at classic industrial parks, but there may also be outliers, such as ecosystems built around a leading huge factory.

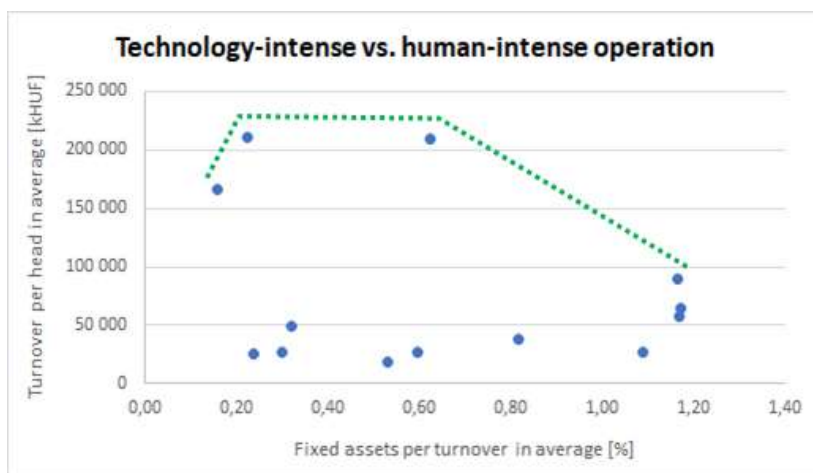
#### 4. Conclusions

The survey was organized in order to reach better understanding of the dominance of technology versus personnel resources based on the results described by turnover figures. It is assumed that operation is normal and sustainable, as the personal or tangible asset costs are financed by turnover, conversely, a combination of these two main 'production elements' generate turnover.

One key indicator taken was per capita revenue, which refers to the level of turnover that an employee can or should generate. The other indicator examined the ratio of fixed assets to turnover, which indicates the dominance of fixed assets relative to the volume of income. The diagrams contain aggregated data of the organizations behind the ecosystems examined. Consequently, it is possible to draw conclusions from the data on the nature of the value creation background of an ecosystem.

Three data points have been eliminated as data out of these were out of requirements of statistically good-quality data in order to avoid incorrect conclusions.

Figure 4: Dominancy of fixed assets compared to human added value



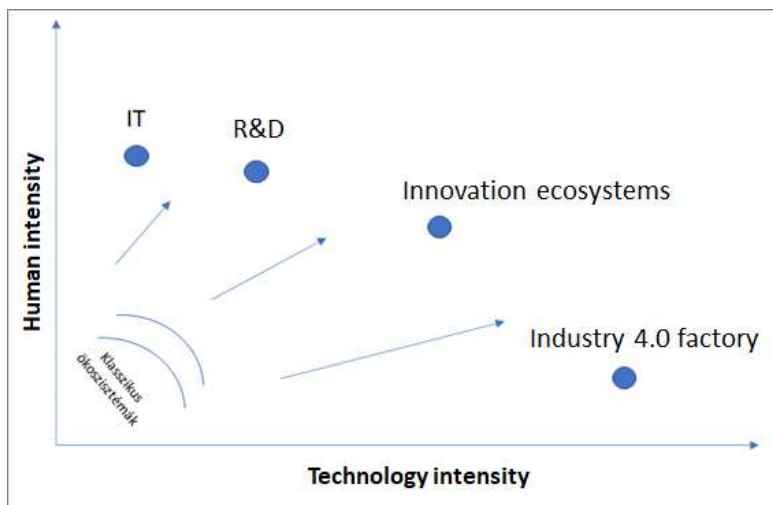
The results and conclusions of the survey are well illustrated in Figure 4, where the value of the fixed asset as a proportion of turnover is considered to be the so-called technological ratio, the proportional share of the personal cost turnover is the reduced value added (excluding profit). The figure can be used to classify individual ecosystems. There was no combination of a high fixed asset ratio and a high personal cost ratio, but the following patterns are visible:

- low technology ratio - low human added value
- low technology ratio - high human added value
- high technological ratio - high human added value

In Figure 4, after removing the outliers, there is a paving line (green) along which the points are the ecosystems closest to the innovation-focused and technological parks, as well as an intensive industrial technology environment.

On this basis, further researches are possible and necessary to assess the intensity of technology and human intensity within an innovation ecosystem. As a result, the general model shown in Figure 5 can be justified, which can prove that the nature of science and innovation parks based on high added value or technology-intensive activities. It can be stated as preliminary hypothesis, that striving for "upwards" in terms of personal vs. technological intensity is apparent, so maximizing any elements of the two dimensions (or their combination) is typical while aiming reaching higher and higher levels of added value and/or technology. This way, an *innovation boundary curve* can be identified which is characteristic for the specific innovation ecosystems.

Figure 5: General model for the dominance of fixed assets vs. personnel costs



## 5. Example - Technological Developments in the Interpretation of the Model

In terms of the ratio of fixed assets to personnel costs, information technology (IT) is usually a human intensive sector. R&D background of IT developments (e.g. 5G or other telecommunications platform) is more aimed at investing into human resources, higher skilled employment of professionals (installation is already hardware-intensive, as usual). One another extreme characteristic area of the model is the Industry 4.0-oriented factory, requiring the implementation of the more technology in combination (e.g. machine-to-machine (M2M), communication technology, additive technologies, use of robots in production efficiency, etc.). The use of different efficiency-enhancing and value-creating technologies is a necessity for companies and factories, as this will enable them to maintain their competitiveness, so it is extremely important to adapt new technologies. As a result of that, technology development will be considered to be of an intensive nature. Intermediate areas such as R&D activities and innovation ecosystems are a kind of transition zone between the two above mentioned areas. R&D oriented activities are more human-intense since research activities and developments are carried out through professionals while involving lower proportions of physical technology. Innovation ecosystems then might aim to increase and innovate technology efficiency (even through the combined use of different technologies), so it can be said that innovation activities need human resources as much as technological know-how.

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## **Ability, Motivation and Opportunity in Organizations as part of High Performing Work Systems (HPWS) - A Literature Review**

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### **Abstract**

High Performance Work Systems (HPWS) are bundles of human resource management practices designed to increase individual and organizational performance. Performance management practices include elements such as enhancing ability, motivation and opportunity to contribute (AMO). Little research is done on the impact of AMO as the part of the HPWS.

The purpose of this paper is to systematically review the existing literature to determine associations between the two concepts. The results of this analysis identify the limitations of research work on the association of both notions and suggest a holistic approach for further research. This synthesis of current research works will help scientists and practitioners aiming to analyze this topic.

### **Keywords**

HPWS, performance management, motivation, AMO

## 1. Introduction

Current research on Human Resource Management (HRM) focuses on the analysis of specific bundles of practices, known as High Performance Work Systems (HPWS) as well as their impact on organizational performance (Combs, Liu, Hall & Ketchen, 2006; Korff, Biemann & Voelpel, 2017). HPWS are defined as bundles of HR (Human Resource) practices that increase employee knowledge, skills and abilities (KSA) along with motivation, thus, having a strong impact on organizational performance (Combs et al., 2006). HPWS includes a set of Human Resource practices such as staffing, self-managed teams, decentralized decision-making, training, flexible work assignments, communication and compensation (Evan & Davis, 2005). These topics cover the following HR tasks in organizations: recruitment, selection, training, performance management and compensation, flexible job design, and employee involvement. HPWS were found to enhance motivation and commitment of employees, resulting in higher individual and organizational performance (Becker & Huselid, 2006). Such HPWS was found to correlate with financial outcomes (Becker & Huselid, 1998). Evan and Davis (2005) found an association between HPWS and organizational efficiency as well as flexibility. Hartnell, Ou, Kinicki, Choi and Karam (2019) determined a strong impact of HRM practices on financial outcomes and customer feedback.

Despite these findings, more research on HPWS is needed. Such, Bendickson, Muldoon, Ligouri and Midgett (2017) mention the importance of further analysis of HPWS in start-up companies. Also, Boon, Hartog and Lepak (2019), in their systematic review on HRM practices, stressed the necessity of further analysis of interactions and possible synergies between different HRM practices. The current paper aims to summarize the latest studies (2017-2021) on HPWS as well as their influence on employee motivation.

## 2. HPWS and Motivation

### 2.1. HRM practices and Human Performance Work Systems (HPWS)

Various areas of action are derived from the objectives of personnel management whose contents vary immensely in the literature. Among them are staffing, self-managed teams, decentralized decision-making, training, communication, compensation and flexible work assignments. Staffing is defined as the procedures to evaluate relevant knowledge, skills, and abilities for job and organization fit; training addresses the aspects of formalized programs to develop knowledge, skills, and abilities (Evan & Davis, 2005).

Self-managed teams are associated with the redistribution of power among team members and is connected to decentralized decision-making. Flexible working assignments and open vertical and horizontal communication channel providing access to information and opportunities to express viewpoints, are aimed to motivate employees together with monetary strategies, including performance-contingent pay, group-based pay and above market pay policies (Evan & Davis, 2005). These practices are considered to be interdependent. The authors also underline the necessity of further research of HR practices and job characteristics, including attraction, development and motivation of employees.

HPWS include these HRM practices, which aim to improve the performance in organizations (Bendickson et al. 2017). HPWS were addressed in the course of HR research in the 1990s (Hausmann & Scheel, 2014) and are based on the assumption that human resource management contributes to the economic success of the company in case of personnel selection of the motivated employees and if the working conditions enable the workforce to put in their best performance (Hausmann & Scheel, 2014).

Organizational performance is an indicator that measures the organization's ability to achieve its goals. The main focus is on efficiency, effectiveness (Yazid, Yahya, Ishak & Achim, 2017). "Performance, therefore, can be defined as the evaluation of the constituents' aspiration levels using efficiency, effectiveness, or social referent criteria ..." (Radzi, Jenatabadi & Hasbullah, 2015, p. 2.). Effectiveness refers to the maximum extent to which the customer's requirements can be met and fulfilled. Efficiency, on the other hand, is the assessment of how the resources of the organisation are used economically to achieve objectives.

Organizational performance is the type and quality of tasks performed in an organization to achieve profit (Radzi et al., 2015). Several studies have revealed the positive influence of HR systems on the performance of an organization, especially in cases where those systems provide employees with the ability, motivation and opportunity to drive behavior (Schmidt & Pohler, 2018). Empirical studies show that innovative HRM practices such as HPWS have a strong positive association with higher worker productivity and improved financial performance (Altmann, 2006).

However, only a few authors have studied the impact of HPWS on motivation. Although more studies than before have been published on this topic during the last 10 years, much more research on HPWS and motivation is required. Such, intrinsic motivation was found to be associated with HPWS (Hausmann & Scheel, 2014).

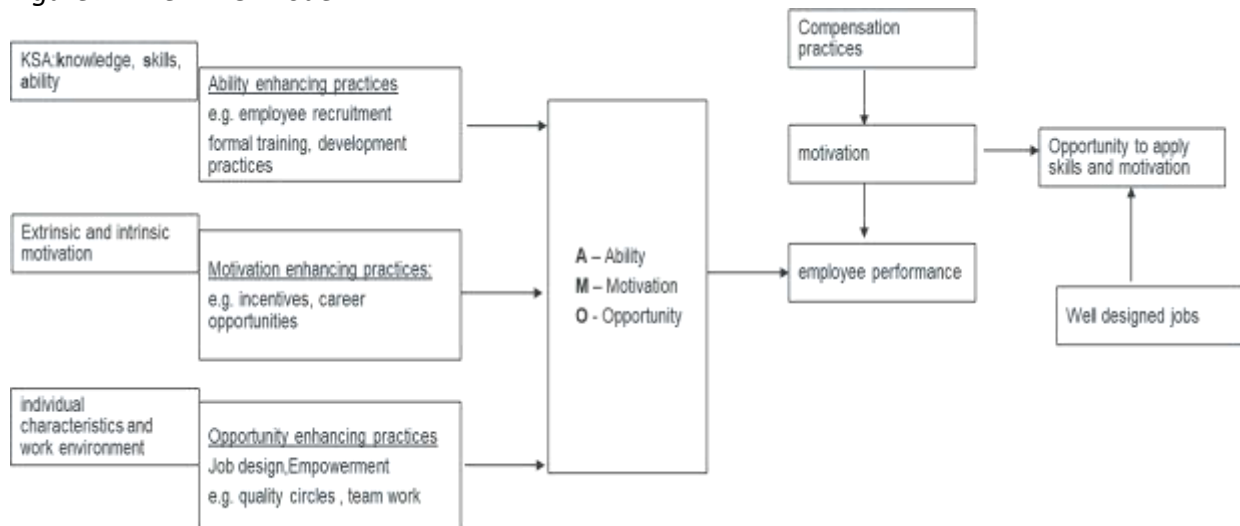
Such studies help in creating a framework for the successful implementations of HPWS based on the participation, engagement, and empowerment of employees, rather than on employee control. In this respect, HPWS differs from the more traditional management approaches, including normative and rational approaches that are based on industrial betterment or scientific management ideologies (Barley & Kunda, 1992).

## **2.2. Performance management and motivation**

Performance management is a continuous process of identifying, measuring and developing the performance of individuals and teams. Performance management ensures that the activities and results of the employees are aligned with organizational goals. Thus, performance management serves to establish a direct link between employee performance and organizational goals, thereby clarifying the contribution of the employees (Aguinis, 2006). Employees expect a supportive work environment, including clear communication and feedback. A properly functioning performance management leads to clarity among the employees regarding their role and the tasks assigned to them. Employees are informed about their responsibilities and have an opportunity to further develop their skills (Jetter, 2004).

The goals of successful performance management could be reached by using different techniques and practices, including the strategy, combining ability and motivation of employees, as well as providing them the opportunity to succeed, the so-called AMO (Appelbaum, Bailey, Berg and Kallenberg (2000)). The acronym AMO stands for 3 elements that positively influence the performance of employees: A for Ability, M for Motivation and O for opportunity. Figure 1 summarizes the AMO model and the enhancing practices.

Figure 1: The AMO Model



The AMO framework has emerged in 2000 and is largely accepted as an explanation for the link between HPWS and performance. Such, Schmidt and Pehler (2018) revealed the positive influence of HRM practices on the organizational performance, if those systems provided employees with the ability motivation and opportunity-to-drive behaviors. Among the further aspects, known to have an impact on individual performance, are compensation practices and well-designed jobs (Schmidt & Pehler, 2018; Jiang, Lepak, Hu & Baer, 2012). Despite these finding, more research on HPWS, motivation and performance is needed.

### 2.3. AMO and HPWS

This research work on HPWS is gaining attention among academics and practitioners in the last few years (Boon et al., 2019). The literature search for this paper was done in “Web of Science” (including underlying databases). The search covered peer-review academic literature on HPWS HR systems and motivation, published from 2016 to 2021, containing the keywords in the title or in the abstract. Citation index is not used as a criterion for selection/de-selection as even very new articles of 2020 /2021 are also relevant. As long as there are different approaches to define HPWS, the search included also further terms, shown in Figure 2.

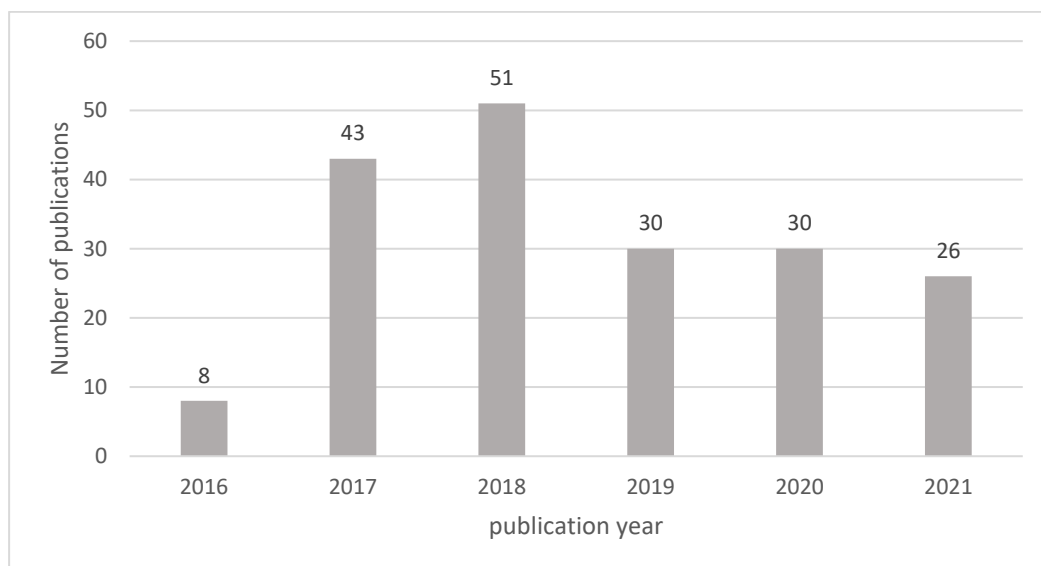
*Figure 2: Specification of search term*

(HPWS OR "high performance work system\*" OR "human resource management system\*" OR "human resource system\*" OR "HR system\*" OR "HRM system\*" OR "HR bundle\*" OR "HRM bundle\*" OR "HR configuration" OR "set of HR practices" OR "human resource (management) practices" OR "human resource practices" OR "high involvement work system\*" OR "high commitment work system\*" OR "high performance HR\* practice\*" OR "high involvement HR\* work practice\*" OR "high commitment HR\* work practice\*")  
 AND  
 Motivation  
 Restricted 2016 - 2021

The search was restricted to literature published in the English language only, and research areas with no relevance to this work like those of geography, agriculture and biotechnology were excluded. Focus was on business economics, psychology, public administration, social issues, behavioral science and sociology.

Figure 3 describes the number of articles covering the topic HPWS and motivation, which is increasing over the last 5 years.

*Figure 3: relevant Articles for the last 5 years, Web of Science, in general 188 articles*



In the next step, research was limited to HPWS and motivation, including AMO, using Web of Science and Scopus, also limited to the latest publication dates. The search term was:

"HPWS AND motivation, year- 2017-2021"

The results of the research delivered 30 articles in Web of Science and 30 in Scopus. Three studies were excluded as they did not demonstrate sufficient quality. Table 1 presents summary on the latest publications of HPWS and the motivation into influenced elements, mediating variables and the context in which AMO is used.

Table 1: Recent publications on HPWS and Motivation

Year	Authors	type of motivation/ context	mediating element /predictor/ role of	influence on/dependent variable
2021	Zhang & Liu	AMO as theory/ framework	Innovative attitude and perceived behavioral control	innovative work behavior
2021	Li, Li & Liu	employee's motivation	initiative climate	employees job crafting
2021	Miao & Bozionelos	AMO as theory/ framework	Psychological capital	job satisfaction and affective commitment
2021	Wojtczuk-Turek & Turek	AMO as theory/ framework	affective commitment	employee performance
2020	Zheng, Liu & Zhou	employee's motivation	Information technology capabilities	open innovation
2020	Phuong	AMO bundles	ownership styles	firm performance
2020	Edgar & Blaker	AMO as theory/ framework	gender	job performance
2020	Dastmalchian et al.	AMO as theory/ framework	societal culture	organizational performance
2020	Bhatti & Zakariya	AMO as theory/ framework	knowledge sharing	innovation performance
2020	Chung & Pak	AMO as a part of HPWS	motivation enhancing HR practices	individual performance
2020	Edgar & Zhang	AMO as influencing factor	AMO	employee performance
2020	Mowbray & Wilkinson	AMO as theory/ framework	employment relation and organizational behavior	employee voice behavior
2020	Rehman & Hawryszkiewicz	AMO as theory/ framework	-	knowledge capital, intellectual capital (IC)
2019	Siddique & Procter	employee's motivation	relational coordination	organizational performance
2019	Ul Hassan & Din	relationship of motivation and HPWS	knowledge sharing	intrinsic motivation and authentic leadership
2019	Han & Kang	AMO as part of HPWS	vertical fit & entry time of company	organizational performance
2019	Shahzad & Arenius	AMO as theory/ framework	human capital, motivation and employee voice	innovation performance
2019	Bryson & White	effect on HPWS on motivation	motivation as factor	high performance and employee motivation
2019	Wang & Baba	AMO as mediator	employee's role definition, trust in the supervisor	employees voice and helping
2019	de Reuver & Van de Voorde	motivation as Part of HPWS	workload	employee absenteeism
2019	Hassan & Din	intrinsic motivation as factor	knowledge sharing	employee creativity
2019	Mohanty & Pradhan	employee motivation as trait	business strategy	competitive advantage
2019	Chumphong & Potipiroon	employee motivation as trait	CEO leadership	organizational performance

2019	Li, Naz & Khan	AMO as theory/ framework	job satisfaction, perceived organizational support, and employee engagement	employee performance
2018	Wahid & Hyams- Ssekasi	AMO as theory/ framework	employees attitude, institutional context	employee performance
2018	Messersmith & Kim	motivation is influenced by HPWS and VPD	-	vertical pay dispersion (VPD)
2017	Raineri	AMO as a predictor	employee perception of HPWS practices	performance

### 3. Discussion

When analyzing this summary, the output variables can be clustered into two main groups, the individual (e.g. Bryson & White, 2019) and the organizational (Han & Kang, 2019) performance. Further factors, including individual level attitudinal factors like being open for innovation (Bhatti & Zakariya, 2020), creativity (Hassan & Din, 2019) and job satisfaction (Li, Li, and Liu (2021) were considered. Different variables were analyzed as mediators, as well as on the individual and the organizational level, including innovative attitude (Zhang & Liu, 2021) and initiative climate (Li, et al., 2021), commitment and psychological capital (Miao & Bozionelos, 2021), and ownership styles (Phuong, 2020).

Only few articles assessed the topic of AMO in the frame of HPWS (e. g. Chung & Pak, 2020; Han & Kang, 2019). In the study conducted by Raineri (2017), the influence of the AMO on the perception of HPWS practices by employees was analyzed. Based on this research, it can be concluded that further research on this topic is needed.

### 4. Conclusion

Different studies address the topic of the impact of the individual and organizational aspects on the individual and organizational performance (Hartnell et al., 2019). Despite the increasing popularity of this topic, only few studies have focused on the combination of the HPWS, motivational aspects and organizational effectiveness and performance. The majority of research approaches focus on separate HR practices, ignoring the synergy effects. In the study by Hartnell et al. (2019), HR practices were compared with leadership and cultural aspects in order to find out which of them have the strongest impact on organizational performance.

The authors noted that "...research remains fragmented regarding the interrelationships between organizational culture and elements of an organization's system, and little theoretical development exists regarding the strength of association between culture dimensions and other elements of an organization's system" (p. 833). Motivation is an important aspect of organizational and individual performance and should be researched in more detail. Such a theoretical model like AMO should be considered when considering the association between HPWS and performance.

## 5. Limitations and Future Research

The present study focuses on the analysis of current publications regarding HPWS and motivation. Despite the growing interest in the topic, only a few articles have addressed the topic of implementation of AMO in the frame of the HPWS. The topic not only has a theoretical but also a high practical relevance.

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## The "Ideal" Leadership Style in the Confluence of Generations and Cultures in the Workplace: Development of a Research Model and Pretest

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### **Abstract**

Leadership styles and knowledge about how to motivate others to do both, “the right things” and “the things right” has a millennia-long tradition. Also, it has undergone many changes over time, responding to transformations in society. This contribution addresses two social phenomena that affect leadership style, namely cultural differences and intergenerational differences. It is a conceptual paper, presenting a research idea that views leadership styles through the lenses of culture and generations. Key conceptual foundations are addressed, and a research model is presented that includes the variables of culture and leadership. The challenges of empirically collecting sensitive information (as is not uncommon in personality and performance studies) are addressed in the context of a pretest. Findings of a small sample pretest of main measurement instruments are presented. The research, when completed, should enable a re-evaluation of existing leadership models in relation to cultural and generational differences. Managers should be able to find the "right" leadership methods for their future employees, adopt them and train leaders in them. For academia, the research should make a further contribution to the research field of "leadership" as well as to cultural and generational research relevant to the workplace.

### **Keywords**

Leadership, leadership styles, generation Z, culture, personality

## 1. Introduction

Organizations in the private and public sectors and their leaders need to be agile and allow and initiate change. Rapid and very far-reaching changes in the business environment due to digitalization and globalization make such adjustments urgently necessary. The impact is visible in the organization's resources, including human resources. Hierarchies are becoming tighter, old governance structures are dissolving, leadership cultures that have remained unchanged for many years have to be quickly adapted to the new age in connection with the above-mentioned developments. Leadership today means more than just controlling, delegating, and budgeting. The modern concept of leadership means above all creating a new world in which people want to work - and not just have to work (Hinkelmann & Enzweiler, 2018).

The people who have grown up with these changing environmental conditions have also changed greatly. A new generation, the so-called "Gen Z", is emerging and starting to enter the world of work. Companies are facing new problems and expectations. These expectations are also placed on managers and leaders. For companies to remain competitive, they need good and motivated employees. These employees are increasingly part of a global workforce, which brings another dimension of change. It is not easy to find talent that is willing to adapt to a different cultural environment. Instead, managers have to redesign their leadership strategies and concepts and try to adapt to the new environmental conditions (Chillakuri & Mahanandia, 2018).

## 2. Research Motivation

Generational change entails the evolution of the main constructs of leadership, Generation Z and culture. Leaders should know that their skills and leadership styles will be assessed differently by future generations. Cultural differences can also play a role with regard to internationalization and the mobile workforce, as well as digital leadership.

The motivation for this research is to explore new developments and to show a new perspective on leadership that is suitable for the future young workforce. There has been a lot of research related to culture with leadership up to now. However, the relationship with Generation Z has not been explored and there is very little literature on it. Generation Z and leadership is a relatively new area of research as this generation is not yet in the labor market. In addition, culture plays a role in an increasingly globalized workforce. Generation Z representatives from different cultures may expect different leadership qualities from their supervisors. The research gap aims to find out valuable information and correlations through the following research questions:

- What expectations do the representatives of Generation Z have of the leadership skills of their managers?
- What "ideal" leadership styles can be derived from this for the representatives of Generation Z who will soon be entering companies?
- Are there cultural differences in terms of collectivist/individualist, high/low power distance, masculine/feminine, more/less uncertainty-avoiding cultures?

### 3. Leadership Theories

The social psychologist Kurt Lewin has divided into three leadership styles: authoritarian leadership style, democratic leadership style and laissez-faire style (Lewin, Lippitt & White, 1939). In addition to the classic styles, new leadership styles are emerging that are intended to meet the expectations and needs of Gen Z.

According to Arsenault (2004) chosen leadership style should consider the following: '*veterans that emphasizes delegation, an individualist approach that values self-expression for Baby Boomers, an excitement style that makes Xers feel like change agents, and a team objective that is relevant to Nexters' values of accomplishing greater societal and corporate goals*' [p. 129].

There is a variety of leadership approaches. Each approach tries to describe an important factor as an explanation for successful leadership. Peters (2015) sums up the following essential leadership approaches: Traditional *trait-theoretic leadership approaches* provide information about which traits a leader should have for successful leadership. *Behavioral approaches* show what behavior managers should have when working with their employees. *Situation theories* are of the opinion that depending on the situation, one should apply a special leadership style that makes sense. According to this theory, there is no leadership behavior that fits every situation. *Interaction theories* focus on the relationship between the leader and his co-workers, which influences one another. *Personality-type-oriented approaches* focus on the structure of the personality of the leader and the employee. The central question is how the characteristics of the different personalities in leadership can be considered.

In this study, the authors focus on *new leadership approaches*. These value the emotions in leadership. The emotional skills of the leader and the consideration of the employees' feelings are important. This division includes transactional and transformational leadership. The first definition of these two styles refers to the American political scientist Burns (1978). The organizational psychologist Bass (1985) applied this concept to the economy. Many other researchers base their constructs on these seminal contributions, among them Ekvall and Arvonen (1994), who developed the scale which is used in this paper.

### 4. Generation Z at the Workplace

Scientific studies have explored criteria that influence the choice of occupation. These are divided into three categories (Jin, Mjelde & Litzenberg, 2014): 1. characteristics of the workplace 2. characteristics of the location and 3. characteristics that affect the individual. Job characteristics consist of attributes that indicate the position and function in the company. These include salary, benefit packages or tasks, and cooperation between employees and managers. Location characteristics include criteria such as the working climate, the length of the commute to and from the workplace, or cultural offerings. Individual characteristics include personal factors such as gender, relationships with family and friends. Also, they comprehend an affinity for mobility and future plans.

So far, there are only a few studies on the job-related characteristics of Generation Z. It is noticeable that the few research results are inconsistent and that the possible attitudes and expectations of Generation Z representatives towards companies and organizations as employers are still almost unexplored (Meret, Fioravanti, Iannotta & Gatti, 2018). GfK Austria Social and Organizational Research conducted a survey with 2,000 Austrians. The research result was to identify factors that were decisive when choosing between two job offers. A pleasant corporate culture was the most important point for the participants. After that, company values and products that fit one as a person and one's own values were named (Kofler, 2015). Both aspects have a relationship to the topic of leadership.

## **5. The Importance of Culture**

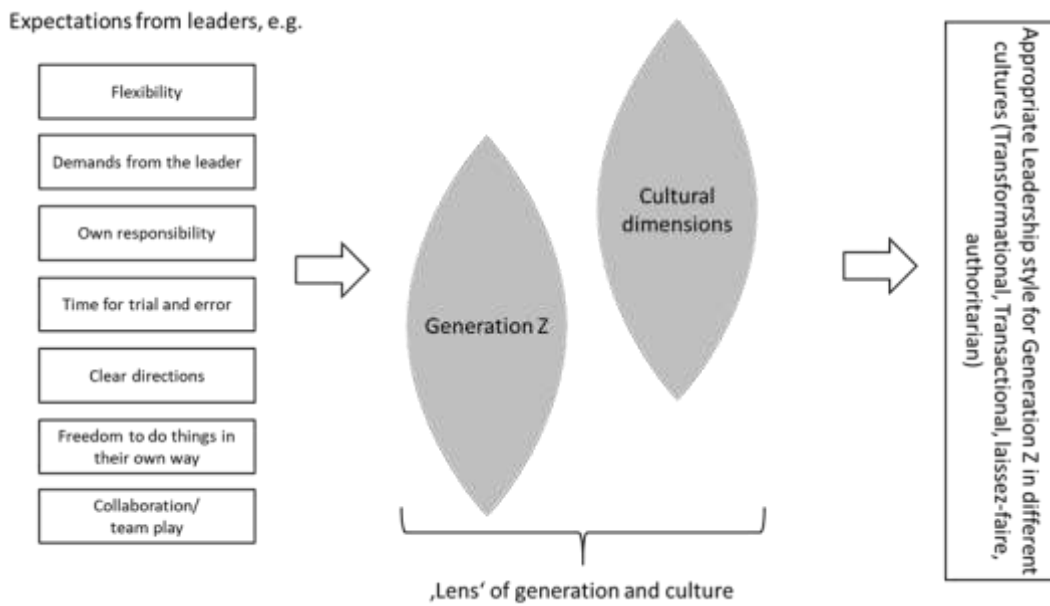
In the 20th century, many researchers tried to understand the essence of people and societies. Edward T. Hall (1976) divides cultures according to their type of communication. He differentiates between high-context cultures and low-context cultures. In high-context cultures, most of information is implicit. In low-context cultures, almost all information is explicit. In practice this subdivision overlaps very much with the traditional versus modern cultures (Hofstede, 2011).

The perception of the same message among different nationalities is very different. A very well-known representative of cultural research is Geert Hofstede. His research has sparked numerous discussions about intercultural management. Cultural theories describe how the culture of a society affects the values of its members and their behavior. Hofstede implemented his model based on a worldwide survey of IBM employees. Through its empirical data analysis he identified work-related cultural dimensions, including power distance, uncertainty avoidance, individualism and masculinity, which can be displayed for many countries (Hofstede Insights, 2021).

## **6. Proposed Research Model**

Figure 1 shows the proposed research model. Existing leadership dimensions should be viewed and reassessed through two "lenses". First, through the lens of Generation Z compared to previous generations and second, through the lens of cultural differences. While generational cohorts can be easily distinguished through the demographic variable of "age", cultural differences need to be considered through cultural dimensions. The intention is to include two countries in the study that have very different manifestations of key cultural dimensions. Austria and Ukraine were selected as target countries for the study.

Figure 1: Research model



## 7. Proposed Methodology

The main study will be conducted as a quantitative study in two countries and with representatives from different generations. Members of Generation Z as well as earlier generations, each with cultural assimilation in Austria and Ukraine respectively, are interviewed by means of a written questionnaire. The focus of the survey is on the expected leadership qualities of young people born after 1997. The results of the survey will be contrasted with classical and modern leadership styles and compared with existing leadership skills and styles.

To find the best study design and measurement tools, a series of pretests is conducted. This paper reports on a cross-generational pretest. The aim of pretest 1 is to prevalidate the scales using a small sample and to uncover initial generational differences in the variables used.

## 8. Measurement Instrument Development and Pretest

The planned study will examine expectations of leaders from the perspective of different generations and different cultures. While demographic factors such as generational affiliation and cultural imprinting are relatively easy to determine using demographic data, measuring expectations of leaders is inherently more difficult. Confounding effects such as socially desirable behavior, response refusals on sensitive topics, or response tendencies that influence the skewness and kurtosis of the scales must be considered. In particular, the problem of social desirability in respondents' answering behavior poses a risk in self-report instruments. In empirical social research, this refers to the tendency of subjects to present their answers in a favorable light in self-assessments, regardless of their actual attitude towards a topic (Fisher, 1993). However, self-report instruments have long been used in psychology, and for many scales there is sufficient evidence of reliability, convergence,

discriminant, and criterion validity (Law, Wong, Huang & Li, 2008). For these reasons, the planned study will use existing scales that have been sufficiently validated in terms of their psychometric properties and have been used in various contexts. In addition, several pretests will ensure an appropriate design.

## 9. Method and Sample

In the pretest, twenty-five Austrian respondents were asked to complete a paper-and-pencil questionnaire. 44 % of the sample were female, 55 % were male. 52 % of the respondents belonged to Generation Z and 48 % represented earlier generations. The members of Generation Z were pupils or students, while the representatives of the older generation had between 5 and 25 years of work experience.

### 9.1. Measures: expected leadership competence

The central variable, namely the dimensions of expected leadership competence, is measured using a scale developed by Ekvall and Arvonen (1991). While the original scale refers to the assessment of the leadership quality of the current supervisor(s), this study asks a projective question about the "ideal leader." Respondents are asked to describe their ideal leader on a scale consisting of 30 items. The answers are plotted on a 5-point Likert scale (ranging from "of critical importance" to "not at all important").

According to a factor analysis completed by Skogstad and Einarsen (1999) the instrument measures three dimensions of leadership, "employee orientation " (10 items) "production orientation ", 10 items, and "change orientation " (10 items). Example items for employee orientation are, "shows consideration for subordinates as individuals," "is considerate," and "lets his subordinates make decisions." Examples from the Production orientation subscale are, "plans carefully," "is very particular about following plans," "gives clear instructions." Examples from the change-oriented leadership subscale are: "offers ideas for new and different ways of doing things," "initiates new projects," and "experiments with new ways of doing things." Internal consistency of the three subscales was sufficient (employee-orientation leadership  $\alpha = .819$ , with items 1 and 4 deleted due to a value below .3 for corrected item-total correlation; production orientation  $\alpha = .768$ ; change orientation  $\alpha = .765$ ).

### 9.2. Measures: work motivation

Scientific studies have explored criteria that influence the choice of occupation. Russell Cropanzano and Citra (1993) brought to our attention that relatively few papers have integrated work motivation in leadership theories. Motivational theories are focusing primarily on the dynamic processes that underlie behavior. The dynamic motivational effects are variables of interest in a cross-generational and cross-cultural study of expected management and leadership styles. For work motivation, 8 items from Gagné, Forest, Gilbert, Aubé, Morin and Malorni's (2010) motivation at work scale. Sample items of this scale are "I do my current job because I enjoy this work very much" or "... because I have to be the best

in my job, I have to be a winner". To collect answers, a 5-point Likert type scale was used, anchored by ("completely true" and "not at all true"). Cronbach's  $\alpha$  was at .808.

### 9.3. Measures: performance

The connection between leadership and performance is intuitively understandable since leadership aims to achieve and increase the performance of employees. Mulki, Caemmerer and Heggde (2015) present a collection of studies proving the positive relationship of various types of leadership and performance. MacKenzie, Podsakoff and Rich (2001) see transformational leadership outperforming transactional leadership in its effect on performance, as "transformational leader behaviours influence followers to perform above and beyond the call of duty" (p. 129). And McColl and Anderson (2002) present effects of leadership styles on performance, which are mediated through frustration and optimism, triggered by leadership behavior.

Consequently, perceived performance should be a variable in the study of leadership styles across generational and cultural differences. Performance was measured by using Azevedo Andrade, Queiroga and Valentini's (2020) short version of the self-assessment scale of job performance developed by Sonnentag and Frese (2002). It uses 10 items. Sample items include "I do my job according to what the organization expects from me" and "I perform hard tasks properly". Answers were noted on a 5-point Likert scale anchored by "better than my colleagues" and "worse than my colleagues". Scale reliability was appropriate, with Cronbach  $\alpha = .777$ .

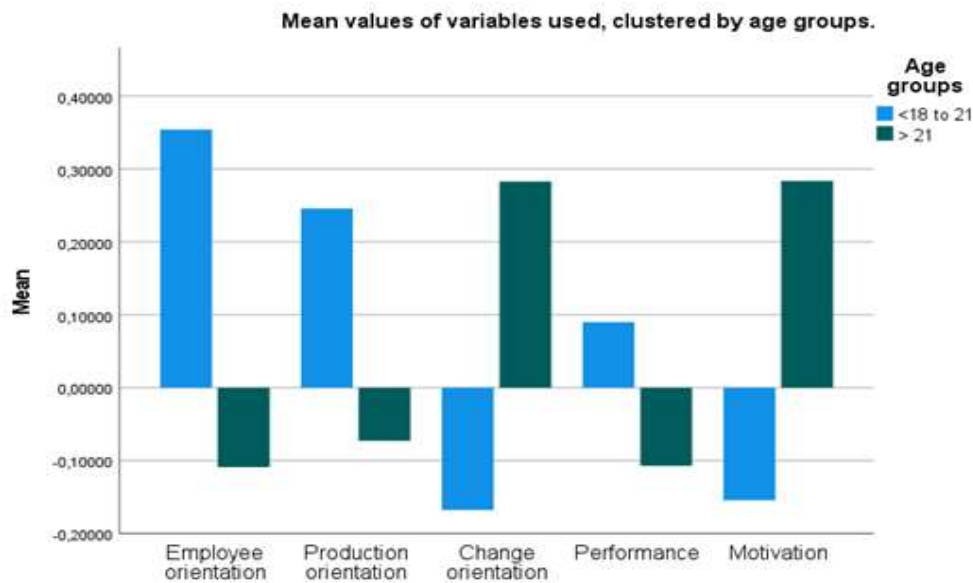
### 9.4. Demographic variables

In addition to the key variables, demographic information is also collected. This concerns work experience, gender, age and education. In the later main study, the dimension "culture" will also be included.

## 10. Initial Data Analysis

The scales used have sufficient reliabilities. There were also no comments from the respondents regarding the correct understanding. No major outliers were found. The aim of the pretest was to gain initial insights into whether there are generational differences in the perception of "ideal" leadership. A first picture of generational differences in different dimensions of leadership is shown in Figure 2. However, this result should be viewed with great caution as the sample size is very small.

Figure 2: First comparison of age group differences in the variables studied



The results show that the leadership dimensions (employee orientation, production orientation and change orientation) are perceived differently by the different generations. Interestingly, there are also differences in work motivation, which is significantly lower among members of Generation Z than among representatives of previous generations. The main study should provide further robust results.

## 11. Conclusions and Implications

The research is expected to yield scientific findings in the field of leadership once it is completed. In addition, a re-evaluation of existing leadership models in relation to Generation Z is planned. The research results shall help managers to find the "right" leadership methods for their future employees, to adopt these methods and to train the managers in them. Managers become aware of the skills they should have to meet Generation Z's expectations. This motivates the representatives of Generation Z and this in turn leads to more efficient and satisfied employees. For the scientific community, the research work should provide a further contribution to the research field of "leadership", as well as to workplace-relevant cultural and generational studies.

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## **The Welfare State in the Corona Crisis: A Comparison between the USA and Germany**

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### **Abstract**

The most important socioeconomic struggle taking place in the world is the struggle over the future of the welfare state. It is a struggle over the nature of the world economic system. The various measures taken by the different countries in their efforts to overcome the corona crisis are essentially related to the struggle over the future of the welfare state. The welfare state is based on an alliance between industrial, or productive, capital, the wage laborers and small businessmen and businesswomen in many sectors of the economy against speculative financial capital and its allies. The two pillars of the welfare state are: (1) state involvement in the economy, aimed at encouraging economic growth and reducing the dependence of the productive sector on the financial sector; (2) providing social services and general benefits in accordance with the principle of universality, i.e., providing them to all citizens, rich and poor, without means tests, based on progressive taxation. In this paper I examine the measures taken by two major countries: the USA, and Germany. In granting corona-related benefits to individual or families Germany has been more in line with the principle of universality than the USA but less generous. In both countries the efforts to prevent an increase in the dependence of the productive sector on financial capital have been insufficient. The welfare state has not emerged from the crisis as the clear winner.

### **Keywords**

Welfare state, Corona crisis, USA, Germany



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