

# Villa College

## Research Digest

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VC Research Digest provides updates on current and ongoing research projects of Villa College staff and students, and provides fresh research ideas and snippets to help expand the horizon of research and inquiry

### EDITORIAL

## To Write or Not to Write: Why All Academics Ought to Write

Dr Ahmed Shahid, Dean of Research, IRI, Villa College

Writing is by far the most important and useful human invention; yes, far more useful than the wheel. Writing is such a wonderful medium that helps us organise our thoughts, feelings, experiences, and ideas most effectively, which can then be disseminated in the form of new knowledge to others. Writing helps us reach out to audiences from different places and different times. A good writing can remain valuable and relevant for thousands of years – if not for eternity. Writing is also one of the most powerful methods of contributing to human knowledge and towards the progress of human society. Therefore, an academic or researcher, by definition, must be a writer because it is the most effective channel of communicating intellectual ideas and research findings to a wider audience. Naturally, respectable academics and researchers invest a significant amount of their time to write in different media, to showcase their work and to connect with their audiences. An academic who does not write is like ‘a fish out of water’, and most certainly not fulfilling their potential.

Considering the poorly developed culture of writing in the Maldives, particularly academic writing, it is vital for the few academics in the country to put an extra effort to change the cultural status quo and promote a new paradigm of expressing themselves through written form. Academic institutions create various platforms and channels which can be utilised by academics to engage in this useful enterprise. At Villa College, the International Journal of Social Research and Innovation (IJSRI) and the Villa College Research Digest provide excellent podia for academics to practice, refine and improve their writing skills and to intellectually connect with a wide audience. Although the effective utilisation of these platforms remains dispiritingly low, there are many good reasons why everyone should roll up their sleeves and engage in writing. Here are just a few thoughts.

Sharing knowledge with the wider community is an essential hallmark of being an academic. Given that

every one of us specialises in a different knowledge domain, communicating such knowledge and professional expertise to a general audience helps enrich the overall knowledge account of the society. Skilful writing of research in the right forums can contribute towards evidence based public policy formulation. New insights and ideas in any given field, including emerging theories and concepts as well as different perspectives, help shape our society and the trajectory of human progress at large. Thus, by publishing their work, academics are lending their support to build on existing knowledge and create a foundation for future research and development in multiple domains.

As academics, we must also be driven by the inherent and intrinsic desire to acquire more knowledge and promote personal growth. Writing can also be a fulfilling personal experience for academics, allowing them to reflect on their own research activities and ideas in addition to refining their own thinking. Writing can also help scholars develop new skills, such as critical thinking, organisation of ideas, and effective communication. While everyone may not be interested in building a personal branding or reputation as an academic, it is still pertinent to put an effort to establish themselves as experts in their field. By publishing their work, academic scholars can build a reputation and establish themselves as thought leaders in their respective knowledge domains.

Considering these, it is worthwhile for every individual academic and scholar to put an extra effort to engage in writing – at least one or two articles per year for the Journal or the Digest. Appreciating the personal gains of honing one’s own thought process, critical thinking and creative abilities in the process of writing, it is vital that everyone lays down a personal writing goal to stay focussed and motivated. Let us all embrace the writing process and its intrinsic rewards wholeheartedly – it will most definitely be time well spent.

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# From Codeswitching to Translanguaging: Embracing the Inevitable in the Maldivian Bilingual Classrooms

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## Introduction

Theethi (class) laan vee ennu morning ah! [Let's have it (the class) in the morning!]

We often talk about our Maldivian learners mixing Dhivehi (L1, first language) and English (L2, second language) in their everyday conversations. Frankly, it has become a nightmare for those strongly against codeswitching (mixing languages in written or oral communication). However, even if we like it or not, it is not only our students but academics like us who have begun (conversations) mixing English and Dhivehi in our everyday talks. The above comment, made by one of our colleagues (an FES lecturer) while we were writing this article, shows that codeswitching has become a regular part of our everyday oral communication. Is this because we are equally competent enough in these two languages (as bilinguals) that what matters is getting the message across rather than the language used? In this regard, mixing two languages might not be an issue as long as our conversations are linguistically or grammatically correct and meaningful. If codeswitching is here to stay, why not use it to our advantage? While codeswitching is done unconsciously or without deliberate planning, intentionally using another language (a word or a phrase) could be critical in understanding our target language. Such intentional use of another language is where translanguaging comes in.

## What is translanguaging?

The term translanguaging, coined by Cen Williams as '*Trawsieithu*' in 1994 (García, 2009), was initially used to refer to pedagogical practices in which English and Welsh were used for different purposes. For example, while one language was used for talking, the other was for writing. Later, Colin Baker translated the term into the English form we know as 'translanguaging' (Baker, 2001). For Garcia (2009), translanguaging is bilinguals' use of two languages fluidly for the purpose of communicating and making meaning. A critical feature of translanguaging is the purposeful use of two (or more) languages, as in Jacobson's (1983) idea of the deliberate concurrent use of two languages in a bilingual classroom. Lewis et al. (2012) also highlight translanguaging as a curricular strategy where teachers could plan and systematically use two languages in the same lesson for teaching and learning purposes. Thus, translanguaging involves a more fluid and dynamic use of languages where two or more languages are deliberately and strategically used to enhance language learning in the bilingual or multilingual context. Translanguaging, therefore, goes beyond the notion of language boundaries and recognises the linguistic resources that bilingual/multilingual learners have at their disposal.

## A new perspective

As codeswitching is inevitable, the next best thing is to embrace reality and deliberately make the most of it for the benefit of our students' language learning

through translanguaging. What if a student in your kindergarten Dhivehi class struggles to understand the meaning of the word ‘shikaarakura meeha’ [hunter]? Would you not rather say it is ‘hunter’ in English if the student is more familiar with the English word? It is not always because the student is weak in Dhivehi, but they may lack a specific word/phrase to express themselves clearly. Similarly, instead of struggling to explain the meaning of ‘however’, how about using a Dhivehi word such as ‘ekamaku’ or ‘ehenas’ to explain the meaning of ‘however’ if your English as a second language (ESL) classroom is homogeneous? Using another language could help students understand the meaning of the words, concepts, and ideas better than trying to mime or draw them. By the way, try miming ‘however’ to your ESL students! As Williams (2002, as cited in Qureshi & Aljanadbah, 2022) contends, translanguaging helps in “using [learner’s] one language to reinforce the other to increase understanding and to augment the pupils’ ability in both languages” (p. 248). In essence, it means using two languages that a learner knows could reinforce their understanding of both languages. Learners can use their knowledge of one language to gain insights into the other.

This new perspective allows bilingual/multilingual learners to draw on their knowledge of multiple languages to improve their proficiency in a target language or to learn concepts of various other school subjects. For example, we have students weak in Dhivehi who have a difficult time understanding the unfamiliar terms they encounter in Islam (religious education) because the vocabulary includes a mix of Dhivehi and Arabic words. In such situations, explaining Islam concepts and ideas in English might be easier to understand if the student is more fluent in English than in Dhivehi. Hence, rather than ignoring the possibility of translanguaging, why not just embrace it with open arms?

### Conclusion

If we were to analyse our daily conversations, we would undeniably realise how much codeswitching (in our case, between Dhivehi and English) has become part and parcel of our everyday talks. Therefore, while it would not be wrong to say that language teachers might ‘hate’ the idea of codeswitching, we recommend they go further as we

ask them to accept and implement translanguaging in their language (or other) classes. We are aware that this may result in some language teachers becoming uncomfortable with this idea. However, our intention is not to make anyone uneasy. Nonetheless, we do wish to draw everyone’s attention to translanguaging and encourage our fellow teachers to give it a more profound thought and begin dialogues about the usefulness of helping our students learn one language by purposefully using/allowing them to use words and phrases of another.

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**Discovery consists  
of seeing what  
everybody has  
seen and thinking  
what nobody has  
thought.**

*Albert Szent-Gyorgyi*

# Principles of Cultural Historical Activity Theory - Part III

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The principles of Cultural Historical Activity Theory (CHAT) provide a framework for investigating the complex relationships between individuals, their environment, and the cultural and historical context in which they live and learn. In previous issues of the Research Digest, discussions around "Principles of Cultural Historical Activity Theory - Part I and II" have been developed to delve into these principles. In this issue I will discuss the final two principles in this series: tool mediation and collaboration in the context of Interactive Whiteboards as a technological tool in classrooms.

## **Tool Mediation**

Tool mediation is a concept that is integral to the arguments made by Vygotsky (1978), who suggested that every human activity involves the use of some sort of tool. CHAT, which stands for Cultural Historical Activity Theory, focuses specifically on tools, both physical tools like interactive whiteboards (IWBs), and non-physical tools like language. According to CHAT, tools play a key role in mediating human activity, and in turn, they help to develop human mental abilities. This means that the way we interact with tools has a direct impact on our cognitive processes and abilities. For example, a driver who navigates through the city using a map or GPS is engaging in tool-mediated activity. Through this activity, the driver is developing a mental map of the city, which they can use to navigate more efficiently in the future. Similarly, tools like language and IWBs are used in educational settings to mediate learning and promote cognitive development.

Before IWBs were introduced into education, other forms of technology like personal computers and digital projectors were used in classrooms. However, each of these technologies mediates learning in different ways, depending on their affordances or the capabilities they provide. CHAT takes into account previous experiences of people and how these experiences shape their interactions with tools. This means that tools are not just neutral objects but are instead embedded in social practices and interactions.

As Kaptelinin and Nardi (2012) note, tools serve as a "mediating means embedded in the interactions between human beings and the world." By understanding how tools mediate human activity, we can gain a deeper understanding of the cognitive processes involved in everyday activities and how we can use tools to promote cognitive development.

## **Collaboration**

The use of technology in education, such as IWBs, involves a degree of collaboration among peers and teachers. While some tasks, like examinations or worksheets, may be completed individually, students' ability to perform well on these tasks is often predicated on prior engagement with a group of people. This collaboration often involves the sharing of knowledge and skills, such as learning how to write in an examination or answer questions, which is done in the classroom with the help of teachers and peers.

According to Leont'ev (1981), "the human individual's activity is a system of social relations," highlighting the importance of social interaction and collaboration in the development of individual activity. This is reflected in the horizontalness of activity theory, as individuals are often engaged in multiple activity systems simultaneously and establish collaborations.

Moreover, CHAT and the underpinning principles emphasize the tool mediation and collaboration of activities, as each component of activity arises as a result of other activity systems that produce them. For example, teachers' experiences with the outcomes of a teacher education program are a result of another activity system - a university. By recognizing the complex relationships between individuals, their environment, and the cultural and historical context in which they live and learn, CHAT provides underpinning principles for investigating these interdependent systems and their impact on individual and collective activity.

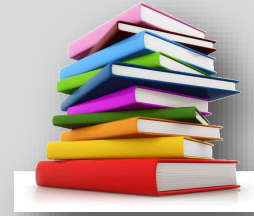
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STEPHEN HAWKING

**The  
greatest  
enemy of  
knowledge  
is not  
ignorance,  
it is the  
illusion of  
knowledge.**

## FROM THE WORLD OF RESEARCH



### **Teaching Health as a Human Right in the Undergraduate Context: Challenges and Opportunities**

*Bisan A. Salhi and Peter J. Brown*

#### ABSTRACT

This paper explores the possibility of a pedagogy about health and human rights that is understandable and persuasive to undergraduate students yet does not succumb to a reductive dualism of optimism and pessimism. In 2014, we presented the topic of health and human rights in an introductory undergraduate global health course in conjunction with the exhibit "Health is a Human Right: Race and Place in America" at the Centers for Disease Control in Atlanta, Georgia. The exhibition highlighted the United States' complicated legacy and failures of health and human rights, with an emphasis on ongoing racial and socioeconomic inequities. In conjunction with class lectures, students viewed the exhibit and submitted a survey and a reflective essay about human rights abuses, as well as possibilities for realizing the right to health in the United States. Contrary to our expectations, the human rights issues surrounding the AIDS epidemic raised very little interest among our students, for whom AIDS is a preventable and treatable chronic disease. Instead, students were most interested in exhibits on eugenics and forced sterilization, deficits in water and sanitation, racism, and contradictions of American exceptionalism. We conclude that an emphasis on the violations of human rights and their health effects using domestic examples from relatively recent history can be an effective pedagogical strategy. This approach represents an opportunity to counter students' presumptions that the United States exists outside of the human rights discourse. Moreover, this approach may reinforce the idea that the domestic race- and class-based inequalities can and should be understood as human rights violations.

Read on... <https://www.jstor.org/stable/10.2307/26727084>

SCAN ME



# Managing Research Consultancy Projects: Nightmares and Lessons Learnt

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Research consultancy projects can be highly demanding and challenging for clients and consultants. They involve a wide range of activities, including designing research methodologies, collecting and analyzing data, and providing recommendations for action. Despite best efforts, teams who work on research consultancy projects can face unexpected hurdles that can derail progress and be fraught with difficulties that can keep you up at night.

The best metaphor that describes my experience managing several research consultancy projects for national and international clients is that it has been a roller-coaster. This article discusses some of the most common nightmares I faced as a research consultancy project manager and the lessons we can learn from them.

## **Common Nightmares**

### ***Unrealistic Expectations***

One of the most common nightmares for research consultancy project managers is managing unrealistic client expectations. Research projects involve various tasks, including data collection, analysis, and reporting, requiring specialized skills and resources. Clients often have high expectations for the quality of research and the speed at which it can be completed. High expectations can be compounded by clients unfamiliar with research methodologies and data collection, leading to unrealistic expectations of what can be achieved within a given timeframe (Davis, 2011; Wood, 2009).

Managing the client's expectations from the outset is essential to avoid this nightmare. This involves setting realistic timelines, discussing the feasibility of research methodologies, and clearly outlining the limitations of the research. Additionally, it is important to communicate clearly with the client throughout the project to ensure that they understand the progress and any challenges that arise.

### ***Data Quality Issues***

Another common nightmare for research consultancy project managers is data quality issues. Data quality issues can arise due to various factors, including errors in data collection, inadequate sampling, and inconsistencies in data analysis. These issues can lead to inaccurate findings, which can have severe consequences for the client (Incremental Group, 2022).

Thus, ensuring that the research methodology is sound and data collection is conducted rigorously and systematically is important. This involves training enumerators, piloting data collection tools, identifying the right sample, and ensuring that data is checked and validated throughout the data collection process. Additionally, it is essential to conduct rigorous data analysis and use appropriate statistical techniques to ensure the findings are robust and reliable.

### ***Scope Creep***

Scope creep is when the project's original goals and objectives expand beyond their initial boundaries, increasing its size, complexity, and duration. Scope creep can arise from various sources, including changes in project requirements, stakeholder expectations, or new information obtained during the project's execution. This nightmare can be caused by clients who request additional research tasks or changes to the research methodology mid-project or by consultants who underestimate the time and resources required to complete the project. Managing scope creep requires vigilance and effective communication to ensure that project outcomes align with the project's objectives and timeline (Conrad, 2017).

It is important to have a clear scope of work agreed upon by both the client and the consultant at the project's outset. This scope of work should outline the research objectives, methodology, timelines, and budget. Additionally, it is vital to have a change management process that outlines the steps required

to manage any changes to the scope of work.

### ***Team Management Issues***

Managing a research consultancy project involves working with a team of researchers, data collectors, and analysts. This can be challenging, mainly when team members are in different geographic locations or have different working styles. Managing stakeholder expectations, communication, and participation is essential to ensure project success and stakeholder satisfaction (Davis, 2011; Incremental Group, 2022).

To avoid team management issues, it is crucial to have clear roles and responsibilities for each team member and to establish clear lines of communication. Effective team management requires identifying clear expectations, agreement on assigned tasks and delivery timelines, and developing a communication plan that fosters engagement and transparency. Additionally, it is essential to have contingency plans in place in case team members are unavailable or if unexpected issues arise.

### **Lesson Learnt**

In addition to the nightmares, managing research consultancy projects offers several valuable lessons (PM Network, 2017; Gasemagha & Kowang, 2021).

### ***Communication is Key***

Clear communication is essential when managing research consultancy projects. This includes defining the project scope, objectives, timelines, and deliverables and ensuring that all stakeholders know these details. Regular communication and updates with the client and consultants help ensure the project stays on track and any issues are resolved promptly.

### ***Collaborative Planning is Essential***

Collaborative planning is crucial to ensure the project is well-defined and all parties have a shared understanding of the scope, objectives, and timelines. Planning should involve input from both the client and the consultant to ensure that the project is aligned with the client's expectations and expertise.

### ***Flexibility is Necessary***

Flexibility is essential when managing research consultancy projects. The project plan should allow for changes and adjustments as necessary, based on feedback from stakeholders and new information that

emerges during the project. This flexibility ensures that the project remains relevant and delivers the desired outcomes.

### ***Attention to Detail is Critical***

Attention to detail is vital in managing research consultancy projects. This includes ensuring that all project documentation is accurate, thorough, and up-to-date and that all stakeholders know of any project scope, objectives, or timelines changes.

### ***Quality Assurance is Key***

Quality assurance is crucial to ensure the project delivers the desired outcomes and meets client expectations. This includes conducting regular checks and reviews to ensure the research methodology is sound, the data collection and analysis are accurate, and the findings and recommendations are well-supported.

### ***Timely Reporting is Important***

Timely reporting is essential in managing research consultancy projects. This includes regularly updating stakeholders on the project's progress and ensuring that final reports are delivered on time and meet the client's expectations.

### **Conclusion**

In conclusion, research consultancy projects can be highly rewarding but also fraught with difficulties. Managing unrealistic expectations, data quality issues, scope creep, and team management issues are some of project managers' most common nightmares. Hence, it is important to communicate clearly with the client, ensure rigorous data collection and



**The  
unexamined  
life is not  
worth living.**

*Socrates*

analysis, establish a clear scope of work, and have effective team management strategies in place.

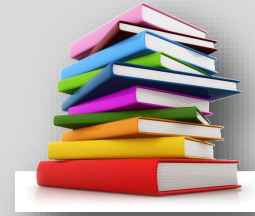
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**The mind is  
not a vessel to  
be filled, but a  
fire to be  
kindled.**

*Plutarch*

FROM THE WORLD OF RESEARCH



## Beyond Two Minds: Cognitive, Embodied, and Evaluative Processes in Creativity

*Vanina Leschziner and Gordon Brett*

### ABSTRACT

Scholars in sociology and social psychology typically represent creativity as an imaginative and deliberate mental activity. Such a perspective has led to a view of creativity as disconnected from the body and the senses as well as from nonanalytic cognition. In this article, we demonstrate that creativity is more grounded in bodily and sensory experience and more reliant on a combination of cognitive processes than has been typically recognized. We use literature on social cognition and embodiment to build our arguments, specifically, the embodied simulation perspective and tripartite process models. We draw from data on elite chefs to show how actors rely on embodied simulations, continually switch between heuristic and analytical thinking, and monitor and control their cognitive processing during the creative process. We outline the implications of this study for the understanding of creativity and extant models of cognition and action more generally.

Read on... <https://www.jstor.org/stable/10.2307/48571546>

SCAN ME





# Tourism Policy and Planning for Climate Change Adaptation

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## **Introduction**

Climate change is one of the biggest challenges faced by the global community, affecting natural systems, societies, and economies. The global tourism industry is highly vulnerable to the impacts of climate change, which threatens to reduce the sustainability of many popular destinations, affect tourist behaviour and preferences, and harm local communities (Loehr, 2020; Pedapalli, Gupta, & Mahajan, 2022) and ecosystems (Jarratt & Davies, 2020). Developing effective policies and strategies for climate change adaptation in tourism is therefore critical for the long-term sustainability of the industry. This article discusses the significance of climate change adaptation in tourism policy and planning, the primary impacts of climate change on tourism, strategies for integrating adaptation, challenges and opportunities for adaptation, and implications for future research and practice.

## **Climate change impacts on tourism**

Climate change poses a significant threat to the sustainability and future of the tourism industry worldwide. The industry is affected by a range of climate change impacts, including sea-level rise, changes in temperature and precipitation patterns, extreme weather events, and impacts on natural ecosystems and wildlife (Dogru, Marchio, Bulut, & Suess, 2019). These impacts can potentially cause significant economic, environmental, and social consequences for tourism destinations and stakeholders (Leal Filho, 2022; Scott, 2021). For example, coastal areas and small island states are particularly vulnerable to sea-level rise and storm surges, threatening to erode beaches, damaging infrastructure and facilities, and cause flooding and erosion (Cevik & Ghazanchyan, 2021). Changes in temperature and precipitation patterns can affect the quality and availability of outdoor activities, such as diving and sightseeing. At the same time, extreme weather events can cause significant disruptions to transportation and other tourism services (Day, et

al., 2021). Therefore, sustainability and future of the tourism industry are significantly threatened by the impacts of climate change, causing economic, environmental, and social consequences for destinations and stakeholders worldwide, especially in coastal areas, and small island states vulnerable to sea-level rise, beach erosion, and increased frequency of extreme weather events.

## **Integrating climate change adaptation into tourism policy and planning**

Developing effective policies and strategies for climate change adaptation is critical for the long-term sustainability of the tourism industry of any destination. Key strategies for integrating climate change adaptation into tourism policy and planning include risk assessment (Papathoma-Köhle, et al., 2016), stakeholder engagement (van der Voorn, et al., 2017), and adaptive management approaches (Wilson, et al., 2020). Integrating these aspects of climate change adaptation into tourism policy and planning is crucially significant.

The tourism industry is highly vulnerable to the impacts of climate change, which poses significant risks to the long-term sustainability of tourism destinations. Papathoma-Köhle et al. (2016) states that risk assessment involves identifying and assessing the potential impacts of climate change on tourism destinations, stakeholders, and activities and developing plans to address these risks. Moreover, van der Voorn et al. (2017) elaborates that stakeholder engagement is a crucial component of climate change adaptation policies and strategies. Engaging local communities, tourism businesses, and other stakeholders in developing and implementing these policies is essential. Moreover, Wilson et al. (2020) argue that adaptive management approaches are necessary to address the dynamic nature of climate change. Adaptive management approaches involve regular monitoring and reviewing policies and strategies and making

adjustments as necessary based on changing circumstances and new information. Therefore, incorporating climate change adaptation strategies into tourism policy and planning is crucial for ensuring the long-term sustainability of the tourism industry. Utilising risk assessment, stakeholder engagement, and adaptive management approaches can aid destinations in better preparing for and adapting to the effects of climate change, ultimately creating a more robust and sustainable future for the tourism sector.

For example, a destination in a coastal area may use risk assessment to identify and evaluate the potential impacts of sea-level rise and storm surges on tourism activities and stakeholders. Stakeholder engagement would include involving local communities, tourism businesses, and other stakeholders in developing and implementing climate change adaptation policies and strategies, such as constructing sea walls, elevating buildings, and relocating vulnerable tourism infrastructure. The implementation of adaptive management approaches can support the destination in effectively monitoring and evaluating the efficacy of its policies and strategies over time. This, in turn, enables the destination to make necessary adjustments to ensure the sustained effectiveness of its policies and strategies.

By integrating these aspects into the planning and management practices, coastal destinations, such as the Maldives, can proactively address the challenges posed by climate change, promote resilience, and ensure the long-term sustainability of its tourism industry.

### **Challenges and Opportunities for Climate Change Adaptation in Tourism Policy and Planning**

Despite the importance of climate change adaptation in tourism policy and planning, there are many challenges and barriers to its implementation. These include lack of political will, limited resources, and competing interests (Mowforth & Munt, 2016). However, there are also significant opportunities and potential benefits of climate change adaptation in tourism policy and planning, including improved sustainability, increased competitiveness, and enhanced stakeholder engagement (Mowforth &

Munt, 2016). By adapting to climate change impacts, tourism destinations can become more resilient and sustainable, better able to compete in the global marketplace, and more responsive to the needs and preferences of tourists and local communities.

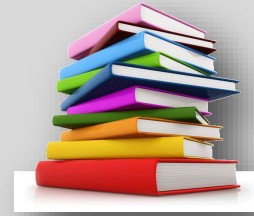
### **Conclusion**

Climate change adaptation is a critical component of sustainable tourism policy and planning. By integrating climate change adaptation into tourism policy and planning, destinations can better prepare for and manage the impacts of climate change, improve their sustainability, and enhance their competitiveness. However, significant challenges and barriers to implementation must be overcome, including lack of political will and limited resources. Future research and practice on climate change adaptation for tourism policy and planning include identifying destructive power dynamics that hinder sustainable tourism, and to identify strategies and interventions which can be used to maximize the use of limited resources available for promoting sustainable and resilient tourism in a changing climate.

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## Marine Litter: Solutions for a Major Environmental Problem

*A.T. Williams and Nelson Rangel-Buitrago*

### ABSTRACT

A current major environmental problem is that marine litter is being deposited in increasing amounts on the world's beaches and oceans. This is especially true for plastics, which form the bulk of the litter and which can last for an unknown number of years in the oceans. This article concerns itself with some solutions that can be applied to this problem. The standard responses involve cutting down plastic waste at the source, beach cleanups, use of the circular economy, education, and a reduction in packaging, among other solutions. Knowledge, prevention, mitigation, removal, and behavioural change are the key mandates involving a host of measures, ranging from politics, behaviour change, and radiation of plastic by gamma rays in order to strengthen concrete, to turning plastics into fashion items, furniture, bedding, and clothes, amongst many others. Collaboration is the key.

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SCAN ME



# Basics of Structural Equation Modelling

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## **What is SEM?**

The analysis and interpretation of research data and findings can be difficult and time-consuming for many researchers. It is especially challenging when examining various attributes in the social, behavioural, and health sciences. The latent character of social phenomena makes it quite complex to measure, explain and predict particular concepts and events as well as determine the cause-effect linkages among variables, necessitating sophisticated statistical techniques and data analysis methods (Tarka, 2018). Structural Equation Modeling—SEM, a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables (Hoyle, 1995) is one of the most popular methodologies in the quantitative social sciences.

Traditional statistical approaches for data analysis lack flexibility; they specify standard models and assume that measurement occurs without error (Suhr, 2006). Traditional multivariate analyses have several limitations including (1) being descriptive by nature, making it difficult for testing of the hypotheses, (2) results being biased because of measurement error, and (3) traditional regression analyses are ineffective due to absence of model estimation and analyses of several equations simultaneously (Bryne, 2010). However, when quantifying attributes and behaviours, ignoring the measurement error can lead to inaccurate results. Many of the variables in social sciences are latent variables. Latent variables are unobservable variables and cannot be measured directly (Joreskog & Sorbom, 1979). Hence to overcome the difficulty in measuring the latent variables, SEM technique is utilized by many researchers (Mustafa et al., 2018). Although SEM is similar to traditional analysis methods in many ways, it combines aspects of factor analysis and multiple regression making it suitable for testing multivariate causal relationships (Fan et al, 2016). SEM can be used for high quality statistical analysis and reflects

second generation of statistical techniques (Fornell, 1983); it is much advanced than first generation statistical models which analyse only one layer of the linkages between independent and dependent variables at a time (Tarka, 2018). Thus, it is now a major tool for examining and understanding relationships among latent attributes.

## **SEM Basics**

SEM technique is based on variates in both the measurement and structural models. SEM provides a comprehensive means for assessing theoretical models and can be divided into two stages, (1) Confirmatory Factor Analysis (CFA) measurement model, and (2) structural model. A measurement model represents correlational relationships among the constructs while the structural model specifies relationships among the constructs along with the nature of each relationship (Hair et al., 2014). CFA extracts the latent construct from other variables and shares the most variance with related variables (Fan et al., 2016). It is recommended to conduct CFA for all latent constructs before proceeding with the structural model (Awang, 2015) as CFA estimates the latent variables and reduces the data dimensions as well as standardizes the scale of multiple indicators.

## **Performing SEM**

SEM has the capacity to assess both measurement properties and test the key theoretical relationships simultaneously (Hair et al., 2014). While the measurement model measures the latent variables, the structural model tests the hypothetical relationships based on path analysis (Fan et al., 2016). Path analysis is able to explain the causal relationship among variables as well as identify the type of mediation.

In SEM, the causal processes under study are depicted by a series of structural equations that can also be modelled pictorially to give a clearer

conceptualization of the theory under study (Bryne, 2016). These equations represent all the relationships among constructs involved in the analysis. Karakaya-Ozyer and Aksu-Dunya (2018) claim that in SEM a hypothesized model is created displaying directional and non-directional relationships between latent and observed variables.

SEM involves five logical steps: model specification, identification, parameter estimation, model evaluation, and model modification (Fan et al., 2016). Firstly, based on one's knowledge the hypothesized relationships among the variables are specified followed by identification of the model. Model coefficients can only be estimated in the just-identified or over-identified model and not for the under-identified. Next the model is assessed for fitness and finally modified to improve the model fit.

SEM evaluation is based on the fit indices for the test of a single path coefficient and the overall model fit (Fan et al., 2016). All constructs, whether new or from previous research must display adequate construct validity. Once the measurement model is estimated, the specified model is assessed to determine if it is acceptable. Three stages of model fitness namely, absolute fit, incremental fit and parsimonious fit, can be applied for estimating model fitness (Hair et al., 2010). If the model fits well and the parameter estimates match the pathways of the hypotheses, the structural model is supported.

### **Pros and Cons of SEM**

SEM is a popular multivariate approach, and the benefits of SEM are irrefutable. SEM incorporates observed and unobserved variables. Analytical tasks can be handled with more precision by using SEM than by employing 'traditional' statistics (Tarka, 2018). SEM-based approaches have significant advantages over first-generation methods when applied correctly (Chin, 1998). It provides powerful means of hypothesis testing and theory generation (Kaplan, 2001). Using SEM method, multiple related equations can be solved simultaneously to determine parameter estimates.

However, SEM also has its fair share of criticisms. This is mainly due to the fact that SEM models do not provide a complete solution to all problems of causal and measurement analysis (Francis, 1988). Problems

in understanding the role of the null hypothesis and equivalence, difficulties in the specification and modification of SEM models, errors caused by omission of important variables in SEM models, problems with multicollinearity in SEM are some of the general statistical and philosophical controversies regarding the use of SEM models in the social sciences (Tarka, 2018). Thus, due to the high level of complexity, it is difficult to apply SEM models.

Despite the various scepticisms expressed about SEM methods, the advantages of SEM techniques over other approaches are tremendous. Taking into consideration the different aspects of the reality under study and abstract concepts or theoretical constructs, SEM enables complex, multidimensional, and more accurate analysis of empirical data (Tarka, 2018). In fact, the advances in SEM including the developments in multilevel structural equation modeling, growth curve modeling, and latent class applications look very promising (Kaplan, 2001) and thus without doubt SEM is an important and critical tool for statistical analysis. Nevertheless, as advised by Tarka (2018) if we want to continue using SEM, it is vital that we work on improving the practices of using this analytical approach.

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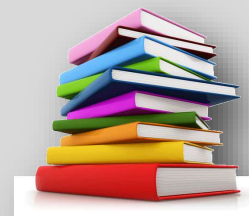
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FROM THE WORLD OF RESEARCH



## Public Responses to Policy Reversals: The Case of Mask Usage in Canada during COVID-19

*Anwar Sheluchin, Regan M. Johnston, and Clifton Van der Linden*

### ABSTRACT

SCoronavirus disease 2019 (COVID-19) has resulted in rapid, substantial, and at times contradictory policy changes as public health agencies and government officials react to new information. We examine the implications of such changes for public compliance by drawing on the case of revised guidance on mask usage by asymptomatic individuals. As official recommendations on the use of masks in Canada shift from discouraged to mandatory, we draw on findings from an ongoing public opinion study to explore contemporaneous changes in rates of mask adoption and levels of public trust in government institutions. We find that Canadians exhibit high levels of compliance with changing policies on mask usage and that trust in public health officials remains consistent despite policy change.

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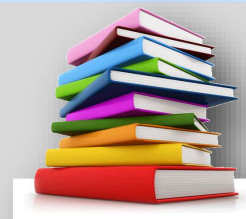
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FROM THE WORLD OF RESEARCH

## The Specifics of Teaching Social Work at Universities in Arab Countries

*Walaa Elsayed, Nagwa Babiker Abdalla Yousif, and Salah Gad*

### ABSTRACT

The processes of democratization, observed in recent years in the traditionally conservative Arab world, actualize the need for social workers, so the aim of the study was to study the features of teaching social work in Arab communities. Twelve universities with undergraduate programs in social work were randomly selected to compare these universities' curricula and social work programs and Ajman University. One conclusion is that social work programs in Arab communities should rely on traditional values of Islamic culture and legal literacy to achieve professionally necessary competence. Improvement of curricula and social work programs following international standards of the profession and taking into account the ethnocultural and religious characteristics of the Arab world will provide the Arab communities with highly qualified social workers who can competently provide support to the needy population categories.

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