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Behavioural Dynamics and Related Adaptations with Change in Weather

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Abstract:
The current pilot research titled “Behavioural dynamics and related adaptations with change in weather” seeks to quantify the repercussion of weather dynamics on human behaviour and choices and emphasises the variance in how individuals perceive and respond to weather.
This research focuses on individuals between the ages of 18 and 40, taking into account gender differences in exploring multiple factors that could influence a person's daily behaviour. These factors include mood, couture, academics, dietary regimen, affliction, retailing, illumination and aeration and travel. The simultaneous interplay of these factors contributes to an individual's judgement skills.
This study aids in comprehending the impact of diverse weather conditions on individuals of varying genders and their employment statuses.
The Pearson product -moment correlation was employed to measure the strength and direction of relationship between 2 variables (male and female population) . The value was found to be 0.10 , which depicts a positive correlation although a weaker one between the male and female participants regarding their adaptations with changing weather .

Keywords: Weather, Adaptations, Mood, Behaviour, Retailing, Diet, Lighting, Ventillation

Introduction:

The intricate relationship between weather and human behaviour has intrigued researchers for centuries. Going beyond basic meteorological factors, weather constitutes an intricate blend of atmospheric conditions that significantly shapes individuals' emotions, decisions, and overall welfare. Our research, titled "Behavioural dynamics and related adaptations with change in weather” focuses on delving into this multifaceted connection.
Weather is the state of the atmosphere, including temperature, atmospheric pressure, wind, humidity, precipitation, and cloud cover. It differs from climate, which is all weather conditions for a particular location averaged over about 30 years. Weather is dynamic, it changes from time to time and has profound effects on human mood and behaviour. Weather conditions lead to shifts in people's emotions, apparel, focus, overall well-being, and decision making. The influence of weather on humans is very individualistic, everyone reacts and feels different about different weather. The influence of weather evolves around age groups because of different roles and priorities of every individual. (Watson, 2000)

According to the American Psychological Association, Behaviour is an organism's activities in response to external or internal stimuli, including objectively observable activities, introspectively observable activities and nonconscious processes. Weather acts as a stimulus which influences an individual's adaptation and choices.

Seasonal Affective Disorder (SAD), also referred to as seasonal depression or winter depression, is a variant of depression. In the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), it is classified as Major Depressive Disorder with Seasonal Pattern. Unlike mere "winter blues," SAD entails symptoms that are not only distressing and overwhelming but also disruptive to daily functioning. (Grohol, 2014)

With the changing seasons, individuals undergo a shift in their biological internal clock or circadian rhythm, leading to a misalignment with their regular daily schedule. (Keller, 2005)

In this study, the focus is on examining eight factors: mood, couture, academics, dietary regimen, affliction, retailing, illumination and aeration, and travel. Each attribute plays a role in influencing how an individual's behaviour evolves and how they might respond to a situation in that moment.

'Mood,' refers to the changes in response to the prevailing situation, particularly influenced by the weather. Weather frequently exerts a significant influence on individuals' moods and emotions, eliciting diverse feelings and attitudes under varying weather conditions. During sunny days, the majority of individuals experience positive emotions as sunlight stimulates serotonin production. However, if the sun is excessively bright, it may lead to an influx of feelings such as agitation and irritation. The connection is intricate and can vary subjectively. (Denissen, 2008 & Watson, 2000)

When it comes to 'Couture' the emphasis is on how weather consistently moulds fashion trends. Individuals often make clothing selections considering the current climatic conditions, prioritising both comfort and style.The connection between couture (fashion) and weather is a dynamic and essential facet of everyday life. In colder weather, there is a preference for full-sleeved tops and dark clothing, while lighter-coloured apparel tends to be favoured on warmer days.

'Academics,' explores how a person's focus during study sessions varies with subtle weather changes, potentially leading to fluctuations in concentration and the onset of feelings of apathy. Unfavourable extremes, whether excessively hot or cold, create an uncomfortable and unmotivated atmosphere, while cool and calm weather fosters a more motivated feeling.

In the realm of 'Dietary Regimen,' individuals modify their food choices not only in response to the weather but also taking into account seasonal availability.Individuals tend to select their food and beverage preferences according to the prevailing weather conditions. For instance, during hot weather, it's common to opt for items with high water content. (BMJ Glob Health, 2023)

'Affliction' is a category where certain weather conditions may increase the likelihood of experiencing specific health conditions. Humid and hot weather increases the prevalence of fungal infections.

The context of 'Retailing,' weather shapes consumer preferences and influences shopping decisions. Seasonal changes are directly proportional to consumer preferences and purchases. The sales of warmer clothes and comfort food and heaters increase gradually in winter months and colder days , meanwhile in summer months individuals generally shop for cooling products and summer clothes . There would be a gradual decrease of shopper influx in physical stores during extreme weather events like storms and torrid days because they deter customers from stepping out, a gradual increase would be seen in online shopping applications and sites . However, on days with pleasant weather would encourage people to step out for shopping and would result in and enhance customer engagement . Retailers often modify their schemes

and products and promotional approach in reaction to the expected meteorological pattern to match the preferences of a consumer.

The concept of 'Aeration and Illumination' explores the substantial influence of weather on both lighting conditions and air quality, examining its repercussions on human well-being. An individual's productivity tends to be affected by reduced illumination and a stuffy environment , it brings the person's efficiency levels down and results in tiredness . For example a student would definitely like to study for their finals near an open window with plenty of fresh air rather than an enclosed dark room. Poor aeration can result in discomfort and reduced illumination might have an effect on eyes and vision. Maintaining ideal lighting and aeration is essential for one's physical health and performance in their task.

Weather shapes an individuals' travel preferences and behaviours, playing a crucial role in influencing their choices and travel patterns. Severe weather conditions such as storms, heatwaves, hailstorms, and heavy rain can cause various inconveniences, including flight delays or cancellations, road blockages, and accidents during long drives in heavy fog. Destinations are often selected based on favourable weather; for instance, hill stations are preferred during rainy days, while beaches are popular choices on sunny summer days. In summary, weather plays an essential role in shaping human travel patterns across different aspects.

Methods:

The hypothesis of the study was “weather conditions lead to shifts in people’s emotions and apparel, overall well - being , focus and decision making.”

To collect thorough insights on this study a mixed - method approach incorporating both online and offline data collection was employed.

Online data was acquired through structured online surveys via Google Forms, targeting a diverse sample of participants across different demographics. Stringent adherence to ethical standards were maintained throughout the study, ensuring compliance with data privacy regulations and obtaining necessary permissions.

Concurrently, offline data collection methods were implemented using hard-copy of self - developed inventories distributed to participants that received a brief introduction to the test along with specific instructions. In adherence to ethical standards, all collected data was securely stored to preserve data integrity.

Participants:

The survey was conducted on 196 participants aged 18 - 40, comprising individuals from both the employed and non - employed /unemployed sectors.

Among the 196 participants 98 were male population and 98 were female participants .

Materials:

A self - developed inventory, comprising 72 statements, was employed for this study, with participants providing responses to five statements each. These statements addressed behavioural dynamics and associated adjustments in response to weather changes. Each statement featured five response options: "strongly agree," "agree," "neutral," "disagree," and "strongly disagree." Participants selected the option that best reflected their viewpoint.

Results:

A relatively low positive correlation has been found between male and female population. The study involved 98 samples of males and females . The Pearson correlation coefficient was found to be 0.10 , the data suggests a minor trend where males and females tend to perceive weather changes in a comparable direction. This underscores the notion that 'every individual perceives weather changes differently.'

Brief Discussion:

The research paper 'Behavioural Dynamics with related adaptations with change in weather', explores eight factors. It provides a comprehensive understanding of its societal significance by addressing Seasonal Affective Disorder and examining the diverse ways in which weather affects mood. These insights have the potential to enhance public awareness, enabling businesses, including advertising companies, to develop strategies that account for seasonal fluctuations and weather-related triggers. The travel and tourism industry stands to gain valuable insights by comprehending weather patterns and their impact on tourist behaviour and travel preferences. Additionally, healthcare institutions can enhance their treatment plans by gaining a precise understanding of how weather influences human health.

A relatively low positive correlation has been found between male and female population. The Pearson correlation coefficient was found to be 0.10, which can be interpreted that males and females tend to perceive weather change in a similar direction. This further emphasises the idea that each person interprets changes in weather uniquely.

The Pearson's correlation coefficient varies between -1 and 1, where 1 denotes a perfect positive correlation, 0 implies no correlation, and -1 indicates a perfect negative correlation. In this instance, the correlation value of 0.10 suggests a positive correlation, albeit a weak one.

It indicates the extent to which both male and female groups exhibit subtle, nearly identical movements in response to perceiving and reacting to weather. The weak value underscores the potential for individual variability in how people, irrespective of gender, interpret changes in weather.

Limitation and future research:

The limited time available likely resulted in fewer participants because potential attendees may not have had sufficient notice or opportunity to plan their involvement. Time constraints likely hinder people from committing to events or activities, leading to a lower turnout.

There is a possibility that the responses may not be authentic, potentially being falsified or selected arbitrarily due to the extensive length of the inventory and the multitude of questions

The abundance of data poses a risk of losing focus in the scoring domain, which is essential for achieving research objectives.

Self - developed inventory provides a fundamental overview of how individuals of different genders perceive various weather conditions, offering insights that guide the direction in which the research may be conducted.

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