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FROM MASLOW TO THE ENVIRONMENT: INVESTIGATING THE INFLUENCE OF HUMAN NEEDS IN SHAPING ECO- PERSONALITY

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Abstract

This paper discusses Eco-Personality and Lifestyle [PL] in relation to three notions, namely Human Interdependence [HI], Subjective Well-being [SWB], and Maslow's Hierarchy of Needs [HON]. *Research Questions:* Does the fulfilment of human needs have positive impact on PL? Is it possible for PL to develop in spite of unmet human needs? *Purpose:* This paper examined the level of PL between the difficulty and convenience of fulfilling human needs. *Approach:* Mann-Whitney U Test was performed to determine the mean variance of PL across the convenience and difficulty of satisfying 24 human needs. *Findings:* The convenience with which 18 out of 24 human needs could be met increased PL significantly. Moreover, fulfilling these 18 human needs established a conducive environment for nurturing PL. The results also showed that PL did not differ substantially across the convenience and difficulty of satisfying five human needs, which was unlikely to have an impact over PL. Additionally, fulfilling these five human needs and fostering PL were found to develop along different trajectories.

Keywords: eco-personality and lifestyle, human interdependence with the environment, subjective well-being, Maslow's hierarchy of needs

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INTRODUCTION

This paper explored how satisfying human needs influences the growth of ecological personality and lifestyle as part of the ongoing research on Human Interdependence with the Environment [HIE]. It was based on the findings of previous studies that formed an integral part of the investigation. The research also stands as an extension of empirical investigations on the relationship between Human Interdependence [HI], Subjective Well-being [SWB], and Maslow's Hierarchy of Needs [HON], building upon the existing body of knowledge in the positive psychology realm.

HUMAN INTERDEPENDENCE

Recent studies have unveiled a fresh perspective on a key determinant that can impact long-term Subjective Well-being [SWB], known as Human Interdependence [HI]. SWB refers to the study of individual's assessment of happiness, emotions, and life satisfaction that encompasses the affective, cognitive, and psychological dimensions of well-being. While SWB is commonly oriented on the present evaluation of well-being, HI is directed toward the future and revolves around the concept that one's well-being is connected to the well-being of others in their environment due to their contributions. As a result, the contributions that one voluntarily or involuntarily imparts to others can positively influence their SWB. Some authors strongly contend that HI is instrumental in promoting sustainable well-being (Garcia et al., 2015; Kjell, 2011).

The attributes of HI cover a wide range of aspects, spanning from internal emotions to external circumstances. These attributes consist of belief systems, learned experiences, involuntary actions, daily routines, and intentional behaviours – all of which play a role in initiating changes within the surrounding environments, thereby influencing individuals' sustainable SWB. The two most recognized contexts of HI are Human Interdependence with other Humans [HIH] and Human Interdependence with the Environment [HIE], each giving rise to four dimensions (see Figure 1).

As part of the efforts to expand the empirical investigation on the topic (Abu Bakar et al., 2020a; Abu Bakar et al., 2020b; Abu Bakar et al., 2018; Abu Bakar et al., 2017a; Abu Bakar et al., 2017b), this paper concentrates on the first dimension of HIE, namely Eco-Personality and Lifestyle [PL].

ECO-PERSONALITY AND LIFESTYLE

Eco-Personality and Lifestyle [PL] is the first dimension of HIE that centers on personality, mindset, inner strength, willpower, wisdom, awareness, and life prospects in relation to the natural environment. Among the numerous traits of PL are ecological mindsets, collectivistic cultures, modesty and moderation in material pursuits, and environmental mindfulness (Abu Bakar et al., 2020a; Abu Bakar et al., 2020b).

HI DIMENSIONS	Human Interdependence with other Humans (HIH)	Human Interdependence with the Environment (HIE)
DIMENSION 1	Personal Empowerment (PE)	Eco-Personality & Lifestyle (PL)
Lifestyles, personality, inner-strength, willpower, wisdom, awareness, and life prospects.	Focus And Resilience, Sense of Control, Self-Determination, Goal Orientation and Self-Improvement	Ecological Mindset, Collectivistic Cultures, Modesty and Moderation in Material Pursuits, and Environmental Mindfulness.
DIMENSION 2	Positive Relationship (PR)	Interaction With Nature (IN)
Intimacy, closeness, familiarity, empathy, affection, voluntary and involuntary interactions.	Affection, Compassion, Forgiveness, Ability to Tolerate Others, Sense of Inclusion and Self-Regulation.	Closeness to Nature, Knowledge of and Empathy Towards Nature, And Health Associated Attributes in Relation to Surroundings.
DIMENSION 3	Organizational Opportunity (OO)	Environmental Behaviour (EB)
Engaging with the surrounding, executing roles or tasks, proving skills and responsibility.	Articulatory and Versatility, Initiatives of Positive Interactions and Cooperative Engagements towards Professional Growth.	Careful and Conscious Decision-Making, Smart Consumerism, Recycling, Energy-Saving Initiatives, and Waste Handling.
DIMENSION 4	Community Movement (CM)	External Condition (EC)
Attitude towards circumstances, interpersonal behaviours with the larger public, etc.	Proactivity, Public Participation, Friendliness, Openness, Respect for Diversity and Sense of Belonging.	Attitudes towards Surroundings Convenience and Encouragements to be Environmentally Responsible

Figure 1: Dimensions of HIH and HIE
 Source: Abu Bakar et al., 2017

PL highlights the attitudes, values, and mindset in relation to the environment. Eco-personalities often prioritize on mindfulness, collectivism, modesty and moderation, and consciousness towards natural resources. PL gives rise to voluntary modesty which value environmental knowledge and ethical behaviour. PL relates to collectivist culture, emphasising communal practices in sustainable living. This suggests that individuals with PL recognize their well-being in correspondences to their surroundings. Through PL, everyday activities are perceived as influential towards the ecosystem and other living creatures, encouraging HIE. Adopting an eco-personality and lifestyle encourages HIE and generates transcendent experiences through a profound connection to both natural environment and future generation. Individuals with PL not only improve their current SWB but also lead to greater and sustained SWB. The indicators of PL are generated from a synthesis of diverse literature sources (Abu Bakar et al., 2018; Abu Bakar et al., 2017a; Abu Bakar et al., 2017b) (see Table 1).

Table 1: Definition, Factors and Indicators of Eco-Personality and Lifestyle (PL)

Definition	Factor	Code	Indicators
Personal orientation portraying collectivistic worldviews and humility towards others and environmental awareness	Collectivistic Culture	PL01	favoring relationships with others over personal success
		PL02	choosing to disappoint self over disappointing family
		PL03	taking account others' opinions in making life decisions
		PL04	taking the pleasure of working with others
	Voluntary Modesty	PL05	practicing moderation in purchasing and using resources
		PL06	feeling unconcerned if not being able to afford things
		PL07	believing that having many assets does not lead to happiness
	Environmental Consciousness	PL08	being mindful about environmental destruction
		PL09	feeling affected by the environmental loss of other countries
		PL10	Viewing media as a platform of environmental campaign

HUMAN NEEDS FULFILLMENT AND WELLBEING

Maslow's Hierarchy of Needs [HON] initially comprised five levels outlining the stages of human motivation (Maslow, 1943). Deficiency Needs and Growth Needs were the initial two sets of the hierarchy. The four most prominent components of Deficiency Needs were Physiological Needs, Safety Needs, Love and Belonging Needs, and Esteem Needs, which were respectively arranged by priority. On the other hand, the urge for Growth Needs was associated to self-actualization. The five stages of HON were later expanded to eight stages in the 1960s and 1970s when Maslow (1962) incorporated Cognitive Needs and Aesthetic Needs within the Growth Needs. Later, Maslow (1970) incorporated transcendence needs as the eighth and final level (see Figure 2).

Deficiency Needs are the survival necessities arising from deprivation. If left unmet, the drive to satisfy these needs will grow over time. For example, prolonged hunger will intensify the hunger. In contrast, Growth Needs are psychological in nature that can be satisfied through engagement in intellectual and artistic endeavours. It commonly emerges from an inner drive to improve and develop as an individual. Meanwhile, transcendence needs, which are the apex of HON, may be realized if lower-level Growth Needs are addressed. However, life adversities, such as marital conflicts or career layoffs, can lead to fluctuations in HON. In real life, individuals are unlikely to go through HON in a one-way direction, but rather they oscillate between different levels of the hierarchy.

Maslow (1943) initially claimed that individuals must first meet the lower-level needs before moving on to the subsequent levels of HON. For instance, achieving Esteem Needs is necessary prior to achieving Cognitive Needs, and similar rule applies across all HON levels. Maslow (1987) later brought more clarity by conceding that meeting a need is not an absolute, all-or-nothing event. He concurred that his prior words might have given the incorrect impression that a need must be completely met before individuals can advance to the next one. Lower-level needs in HON are often the ones individuals have made the greatest strides against and most individuals appear to have partially satisfied these needs. Human needs are dynamic and flexible; hence, individuals can work on different needs concurrently (Abu Bakar, 2022).

The literature presents two opposing perspectives. First, human needs must be satisfied in order to achieve SWB. That is, SWB is not possible without attending to these needs. Secondly, overcompensating some of the needs can result in unhappiness. For instance, excessive wealth that brings ill-being serves as an example of how meeting some of the needs can be shallow. Overcoming obstacles, such as unmet needs, allows individuals to feel more deeply connected to meanings and purposes in life. It is interesting that, in some circumstances, having partially met or unmet needs can offer more meaning to life and boost SWB. Through extensive literature review, this research revealed 24 indicators that represent human needs under the eight stages of HON (see Figure 3).

	HON	UNDERSTANDING
DEFICIENCY NEEDS	1	Physiological Needs The body's need for balance and consistent levels in different bodily systems is called homeostasis. It is driven by survival instincts like seeking shelter, water, food, warmth, rest, and good health. Until this need is met, all other needs are secondary.
	2	Safety and Security Needs The need for safety and security in one's life and surroundings involve seeking protection from violence, health threats, sickness, and economic pressures in order to thrive in modern societies.
	3	Belonging and Love Needs The need for love and a sense of belonging is fulfilled through supportive and communicative friendships, family, and intimate relationships. Deprivation of these needs can lead to feelings of guilt, loneliness, depression, or low extraversion values.
	4	Esteem Needs The need for self-confidence and recognition is fulfilled through positive feelings of self-worth achieved via accomplishments, appreciation, and recognition. Without meeting this need, one may experience feelings of inferiority.
	5	Cognitive Needs The need for knowledge and understanding is fulfilled by yearning for learning, exploration, discovery, and creation to better understand the world. Failure to fulfil this need may result in confusion and identity crisis.
GROWTH NEEDS	6	Aesthetic Needs The need to appreciate and connect with nature's beauty which involves taking time to immerse oneself in natural surroundings, allowing the sights, sounds, and sensations of the environment to refresh and rejuvenate the mind and body.
	7	Self-Actualization The instinctual need to maximize one's abilities and strive to be the best leading to a feeling of generativity –the desire to vote, contribute, volunteer, nurture and guide others to the well-being and growth of future generations or to outlast oneself.
	8	Transcendence Needs The need to surpass self-centeredness, and assist others in self-fulfilment and unlocking potential, also known as spiritual needs – when fulfilled, results in a sense of integrity, elevating one's existence to a higher plane.

Figure 2: Understanding the Stages in the Hierarchy of Human Needs
 Source: Abu Bakar et al., (2022)

STAGES OF HUMAN NEEDS	HON	#	HUMAN NEEDS INDICATORS
Essential Requirements <i>In the absence of them, the living system of mankind is obstructed.</i>	Physiological Needs	HN01	Nutritional and Wholesome Food
		HN02	Access to Medical Care
		HN03	Clean Water (for Drinking and Washing)
		HN04	Clean and Fresh Air
		HN05	Functional and Well-Maintained Lavatory
	Safety & Security Needs	HN06	Sufficient Electrical Supply
		HN07	Affordable Housing and Conveniences
		HN08	Financial Security and Stability
		HN09	Personal Safety and Security
		HN10	Health Insurance
Supplementary Requisites <i>In the absence of them, the living system is not obstructed but lives would be challenging</i>	Belonging & Love Needs	HN11	Work-Life Balance
		HN12	Social Acceptance and Cultural Inclusivity
		HN13	Reliable Communication Network
		HN14	Access to Internet with Reliable Connectivity
Aspired Prospects <i>In the absence of them, the living system is not obstructed and lives would not be too challenging</i>	Esteem Needs	HN15	Primary Education Attainment
		HN16	Secondary Education Attainment
	Cognitive Needs	HN17	Tertiary Education Attainment
		HN18	Employment Prospects and Opportunities
	Aesthetic Needs	HN19	Well-Kept Areas for Recreational Activities
		HN20	Rich Biodiversity of Flora and Fauna
	Self-Actualization	HN21	Rights to Participate in Leadership Selection
		HN22	Freedom of Expression
		HN23	Opportunities Free from Corruption
		HN24	Artistic and Cultural Freedom

Figure 3: Human Needs Indicators
 Source: Abu Bakar et al., (2022)

TRANSCENDENCE AND ECO-PERSONALITY AND LIFESTYLE

Maslow's HON offers an insightful view on the factors that can determine SWB. Individuals can boost their SWB by being aware and attending to human needs. However, depending on circumstances and characteristics, individuals may prioritize and experience HON in different ways. Nevertheless, both HON and SWB are highly individualized and there is no standard approach for pursuing them. Some individuals may find SWB through artistic works while others may experience SWB through social interactions or giving back for the greater good. Maslow (1970) also believed that very few of the world's population have experienced transcendence since it is the pinnacle stage of HON that necessitates tremendous self-improvement and introspection. By improving the lives of others and serving for the common good, those who do reach transcendence will experience a profound sense of fulfilment and inner peace.

Transcendence is the desire and capacity that allows individuals to connect with something greater or beyond themselves, ultimately transcending their own unique identities and concerns (Koltko-rivera, 2015). It entails achieving a sense of selflessness and discovering meanings in a greater cause. Depending on an individual's beliefs and values, transcendence represents the need to experience a feeling of oneness with the world, nature, or a higher force.

Insofar as its characteristics entail a change in emphasis from individual self-interest to a greater knowledge and a sense of duty towards the greater good, Eco-Personality and Lifestyle [PL] corresponds to fulfilling transcendence needs. Individuals with heightened PL contribute to causes beyond themselves and strive toward a more sustainable and peaceful union between the environment and mankind (Abu Bakar et al., 2020a; Abu Bakar et al., 2020b). Individuals who adopt an eco-conscious attitude frequently have a greater sense of purpose. This is consistent with the idea of transcendence, in which individuals attempt to transcend their own needs and desires in order to change the world for the better.

RESEARCH QUESTIONS

With this understanding in mind, the paper seeks to examine the following questions: Does heightened PL depend on fulfilment of human needs, and if so, which human need elevates PL? Alternatively, is it possible for PL to rise regardless of unmet needs, and if this is true, which human needs do not necessarily influence PL?

METHOD

Following the data screening procedure, a sample of 4,315 Malaysian respondents was examined, in response to an online survey, using given an 11-point Likert scale. The data was not normally distributed, according to the results of the Kolmogorov-Smirnova test. Mann Whitney U-Tests served to determine the mean of PL across the convenience and difficulty of meeting 24 human needs.

FINDINGS

The following tabulations demonstrate the (i) mean distribution of PL items, (ii) Mann Whitney U-Test results and (iii) the result's interpretation.

Table 2: Mean Distribution of PL Items

Indicators	Code	\bar{x}	\bar{xPL}
Good relationships are more important than personal achievement	PL01	8.39	8.24
Disappointing myself is better than to disappoint my family	PL02	8.26	
I take into account others' opinions in making my life decisions	PL03	8.24	
I feel happy working with others	PL04	8.44	
I am moderate in purchasing and using my daily resources	PL05	8.28	
I don't mind if I cannot afford to buy the things I like	PL06	8.09	
Having many assets will not give me happiness	PL07	8.09	
I always think about the destruction we are doing to the environment	PL08	8.11	
Deforestation of other countries affect me	PL09	8.08	
Media plays a big role in raising awareness on environmental issues	PL10	8.46	

Note. Mean Distribution of PL Items (\bar{x}) and Overall Mean of PL (\bar{xPL})

Table 3: Mann Whitney U-Test Results

HON STAGES	HUMAN NEEDS	Difficult			Convenient			U	z	p
		N	\bar{xR}	\tilde{x}	N	\bar{xR}	\tilde{x}			
Physiological Needs	HN1	336	2098.18	8.3	3979	2163.05	8.4	648374.0	-9.17	.359
	HN2	423	1989.22	8.2	3892	2176.34	8.4	751764.0	-2.935	.003
	HN3	392	2203.65	8.4	3923	2153.44	8.4	751014.5	-7.761	.447
	HN4	1330	1955.98	8.2	2985	2248.01	8.5	1716333.5	-7.113	.000
	HN5	805	1966.33	8.2	3510	2201.96	8.4	1258481.5	-4.842	.000
Safety & Security Needs	HN6	428	2025.40	8.2	3887	2172.60	8.4	775064.5	-2.321	.020
	HN7	1114	2147.27	8.4	3201	2161.73	8.4	1771007.5	-3.334	.739
	HN8	1861	2076.61	8.3	2454	2219.73	8.4	2131971.0	-3.739	.000
	HN9	1578	1982.11	8.2	2737	2259.41	8.5	1881946.0	-7.044	.000
	HN10	1325	1947.30	8.2	2990	2251.37	8.5	1701698.0	-7.398	.000
Belonging & Love Needs	HN11	1582	1967.39	8.2	2733	2268.33	8.5	1860261.0	-7.649	.000
	HN12	1310	1929.27	8.1	3005	2257.71	8.5	1668635.5	-7.966	.000
	HN13	328	2128.39	8.4	3987	2160.44	8.4	644157.5	-4.448	.654
Esteem Needs	HN14	923	2218.38	8.5	3392	2141.57	8.4	1509680.5	-1.661	.097
	HN15	313	2092.88	8.4	4002	2163.09	8.4	6059930.5	-9.961	.337
Cognitive Needs	HN16	390	1954.75	8.2	3925	2178.20	8.4	686108.5	-3.379	.001
	HN17	836	1985.43	8.2	3479	2199.47	8.4	1309952.5	-4.462	.000
Aesthetic Needs	HN18	1678	2087.71	8.3	2637	2202.73	8.4	2094488.5	-2.958	.003
	HN19	1430	1971.66	8.2	2885	2250.36	8.5	1796308.5	-6.920	.000
	HN20	1453	1931.11	8.1	2862	2273.19	8.5	1749567.0	-8.527	.000
Self-Actualization	HN21	1823	1996.97	8.2	2492	2275.80	8.5	1977894.0	-7.265	.000
	HN22	1957	2048.28	8.3	2358	2249.06	8.5	2092586.0	-5.272	.000
	HN23	2247	2101.05	8.3	2068	2219.88	8.4	2195427.0	-3.131	.002
	HN24	1531	1932.05	8.1	2784	2282.26	8.5	1785225.5	-8.838	.000

Note. Mean Rank of $\bar{x}\Sigma PL$ across Difficult and Convenient; **Bold and highlighted** shows higher mean rank.

The results in Table 3 showed that 18 out of 24 test results were statistically significant, inferring that PL was statistically greater with the convenience of satisfying all of the emphasized human needs.

Table 4: Mann Whitney U-Test Results Interpretation

HON	HUMAN NEEDS	INTERPRETATION
Physiological Needs	Nutritional and Wholesome Food	Respondents who indicated convenience had higher mean rank (N = 3979, $\bar{x}R = 2163.05$) than those who reported difficulty (N = 336, $\bar{x}R = 2098.18$), but the difference did not reach statistical significance (U = 648374.0, p = .359).
	Access to Medical Care	Respondents who indicated convenience had higher mean rank (N = 3892, $\bar{x}R = 2176.34$) than those who reported difficulty (N = 423, $\bar{x}R = 1989.22$). A significant statistical difference was observed (U = 751764.0, p = .003).
	Clean Water (For Drinking and Washing)	Respondents who indicated difficulty had higher mean rank (N = 392, $\bar{x}R = 2203.65$) than those who reported convenience (N = 3923, $\bar{x}R = 2153.44$), but the difference did not reach statistical significance (U = 751014.5, p = .447).
	Clean and Fresh Air	Respondents who indicated convenience had higher mean rank (N = 2985, $\bar{x}R = 2248.01$) than those who reported difficulty (N = 1330, $\bar{x}R = 1955.98$). A significant statistical difference was observed (U = 1716333.5, p = .000).
	Functional and Well-Maintained Lavatory	Respondents who indicated convenience had higher mean rank (N = 3510, $\bar{x}R = 2201.96$) than those who reported difficulty (N = 805, $\bar{x}R = 1966.33$). A significant statistical difference was observed (U = 1258481.5, p = .000).
Safety and Security Needs	Sufficient Electrical Supply	Respondents who indicated convenience had higher mean rank (N = 3887, $\bar{x}R = 2172.60$) than those who reported difficulty (N = 428, $\bar{x}R = 2025.40$). A significant statistical difference was observed (U = 775064.5, p = .020).
	Affordable Housing and Conveniences	Respondents who indicated difficulty had higher mean rank (N = 3201, $\bar{x}R = 2161.73$) than those who reported convenience (N = 1114, $\bar{x}R = 2147.27$), but the difference did not reach statistical significance (U = 1771007.5, p = .739).
	Financial Security and Stability	Respondents who indicated convenience had higher mean rank (N = 2454, $\bar{x}R = 2219.73$) than those who reported difficulty (N = 1861, $\bar{x}R = 2076.61$). A significant statistical difference was observed (U = 2131971.0, p = .000).
	Personal Safety and Security	Respondents who indicated convenience had higher mean rank (N = 2737, $\bar{x}R = 2259.41$) than those who reported difficulty (N = 1578, $\bar{x}R = 1982.11$). A significant statistical difference was observed (U = 1881946.0, p = .000).
	Health Insurance	Respondents who indicated convenience had higher mean rank (N = 2990, $\bar{x}R = 2251.37$) than those who reported difficulty (N = 1325, $\bar{x}R = 1947.30$). A significant statistical difference was observed (U = 1701698.0, p = .000).
Belonging and Love Needs	Work-Family Balance	Respondents who indicated convenience had higher mean rank (N = 2733, $\bar{x}R = 2268.33$) than those who reported difficulty (N = 1582, $\bar{x}R = 1967.39$). A significant statistical difference was observed (U = 1860261.0, p = .000).
	Social Acceptance and Cultural Inclusivity	Respondents who indicated convenience had higher mean rank (N = 3005, $\bar{x}R = 2257.71$) than those who reported difficulty (N = 1310, $\bar{x}R = 1929.27$). A significant statistical difference was observed (U = 1668635.5, p = .000).
	Reliable Communication Network	Respondents who indicated convenience had higher mean rank (N = 3987, $\bar{x}R = 2160.44$) than those who reported difficulty (N = 328, $\bar{x}R = 2128.39$), but the difference did not reach statistical significance (U = 644157.5, p = .654).
	Access to Internet with Reliable Connectivity	Respondents who indicated difficulty had higher mean rank (N = 923, $\bar{x}R = 2218.38$) than those who reported convenience (N = 3392, $\bar{x}R = 2141.57$), but the difference did not reach statistical significance (U = 1509680.5, p = .097).
Esteem Needs	Primary Education Attainment	Respondents who indicated convenience had higher mean rank (N = 4002, $\bar{x}R = 2163.09$) than those who reported difficulty (N = 313, $\bar{x}R = 2092.88$), but the difference did not reach statistical significance (U = 6059930.5, p = .337).
	Secondary Education Attainment	Respondents who indicated convenience had higher mean rank (N = 3925, $\bar{x}R = 2178.20$) than those who reported difficulty (N = 390, $\bar{x}R = 1954.75$). A significant statistical difference was observed (U = 686108.5, p = .001).
Cognitive Needs	Tertiary Education Attainment	Respondents who indicated convenience had higher mean rank (N = 3479, $\bar{x}R = 2199.47$) than those who reported difficulty (N = 836, $\bar{x}R = 1985.43$). A significant statistical difference was observed (U = 1309952.5, p = .000).
	Employment Prospects and Opportunities	Respondents who indicated convenience had higher mean rank (N = 2637, $\bar{x}R = 2202.73$) than those who reported difficulty (N = 1678, $\bar{x}R = 2087.71$). A significant statistical difference was observed (U = 2094488.5, p = .003).

Note. Result Interpretation of Mann Whitney U Test; Bold & Highlighted shows statistically significant output.

Table 4: Mann Whitney U-Test Results Interpretation (continued)

HON	HUMAN NEEDS	INTERPRETATION
Aesthetic Needs	Well-Kept Areas for Recreational Activities	Respondents who indicated convenience had higher mean rank (N = 2885, $\bar{x}R = 2250.36$) than those who reported difficulty (N = 1430, $\bar{x}R = 1971.66$). A significant statistical difference was observed (U = 1796308.5, p = .000).
	Rich Biodiversity of Flora and Fauna	Respondents who indicated convenience had higher mean rank (N = 2862, $\bar{x}R = 2273.19$) than those who reported difficulty (N = 1453, $\bar{x}R = 1931.11$). A significant statistical difference was observed (U = 1749567.0, p = .000).
Self-Actualization Needs	Rights to Participate in Leadership Selection	Respondents who indicated convenience had higher mean rank (N = 2492, $\bar{x}R = 2275.80$) than those who reported difficulty (N = 1823, $\bar{x}R = 1996.97$). A significant statistical difference was observed (U = 1977894.0, p = .000).
	Freedom of Expression	Respondents who indicated convenience had higher mean rank (N = 2358, $\bar{x}R = 2249.06$) than those who reported difficulty (N = 1957, $\bar{x}R = 2048.28$). A significant statistical difference was observed (U = 2092586.0, p = .000).
	Opportunities Free from Corruption	Respondents who indicated convenience had higher mean rank (N = 2068, $\bar{x}R = 2219.88$) than those who reported difficulty (N = 2247, $\bar{x}R = 2101.05$). A significant statistical difference was observed (U = 2195427.0, p = .002).
	Artistic and Cultural Freedom	Respondents who indicated convenience had higher mean rank (N = 2784, $\bar{x}R = 2282.26$) than those who reported difficulty (N = 1531, $\bar{x}R = 1932.05$). A significant statistical difference was observed (U = 1785225.5, p = .000).

Note. Result Interpretation of Mann Whitney U Test; Bold & Highlighted shows statistically significant output.

Table 5: Summary of Findings

Statistically Significant Difference Established (p < .000)		Difference Did Not Reach Significance
Condition 1:	Condition 2:	Condition 3:
PL Increase with Difficulty	PL Increase with Convenient	Neither Change PL
The difficulty to meet the human need increases PL, or PL is greater with difficulty to meet the human need.	The convenience to meet the human need increases PL, or PL is greater with convenience to meet the human need.	Neither convenience or difficulty to meet the human need increases PL, or PL does not change with convenience nor difficulty to meet the human need.

	HON	Code	Human Needs	Findings/Condition
DEFICIENCY NEEDS	Physiological Needs	HN01	Nutritional and Wholesome Food	Condition 3
		HN02	Access to Medical Care	Condition 2
		HN03	Clean Water (for Drinking and Washing)	Condition 3
		HN04	Clean and Fresh Air	Condition 2
		HN05	Functional and Well-Maintained Lavatory	Condition 2
	Safety & Security Needs	HN06	Sufficient Electrical Supply	Condition 2
		HN07	Affordable Housing and Conveniences	Condition 3
		HN08	Financial Security and Stability	Condition 2
		HN09	Personal Safety and Security	Condition 2
		HN10	Health Insurance	Condition 2
	Belonging & Love Needs	HN11	Work-Life Balance	Condition 2
		HN12	Social Acceptance and Cultural Inclusivity	Condition 2
		HN13	Reliable Communication Network	Condition 3
		HN14	Access to Internet with Reliable Connectivity	Condition 3
Esteem Needs	HN15	Primary Education Attainment	Condition 3	
	HN16	Secondary Education Attainment	Condition 2	
GROWTH NEEDS	Cognitive Needs	HN17	Tertiary Education Attainment	Condition 2
		HN18	Employment Prospects and Opportunities	Condition 2
	Aesthetic Needs	HN19	Well-Kept Areas for Recreational Activities	Condition 2
		HN20	Rich Biodiversity of Flora and Fauna	Condition 2
	Self-Actualization	HN21	Rights to Participate in Leadership Selection	Condition 2
		HN22	Freedom of Expression	Condition 2
		HN23	Opportunities Free from Corruption	Condition 2
		HN24	Artistic and Cultural Freedom	Condition 2

The mean distribution across PL items varied between 8.08 to 8.46, thus indicating that the Malaysian respondents had a strong positive sentiment on PL (see Table 2). The respondents were asked to indicate whether the human needs were convenient or difficult to satisfy. Most of them—between half and three-quarters—claimed that it was convenient to meet all of the 24 needs (see Table 3). Mann-Whitney U test was then performed using the average mean(s) of all PL items. The mean variations of PL were compared across the two positions (convenience and difficult).

The statistical results showed that PL increased when it was convenient to satisfy 18 of the human needs. This implies that the convenience of satisfying the highlighted human needs led to increased PL (see Table 4 and Table 5). However, PL did not significantly change with convenience nor difficulty to fulfill certain human needs, namely (i) nutritional and wholesome food, (ii) clean water, (iii) affordable and convenient housing, (iv) reliable communication network, (v) access to internet with reliable connectivity, and (vi) primary education attainment (see Table 4 and Table 5).

DISCUSSION AND CONCLUSION

Our findings revealed that the convenience to fulfil the majority of human needs prompted an increase in PL. It means that the respondents tend to prioritize on meeting their human needs prior to fostering eco-personality and lifestyle. This makes sense given that individuals who struggle in satisfying their deficiency needs may lack the time and energy to act for the greater good.

From a distinct yet related perspective, the findings imply that fulfilling the 18 human needs can nurture eco-personality and lifestyle. This is because meeting the human needs creates a favourable environment for fostering PL. However, it was also observed that fulfilling human needs and fostering PL could develop along different trajectories. This was evidenced by the absence of statistical interactions between PL and the remaining five human needs.

The findings further showed that meeting the growth needs, particularly cognitive needs, aesthetic needs, and self-actualization, encourages empathy and a sense of interdependence with one's surroundings. Individuals who are more self-aware, creative, and committed to their own development often have greater purpose, which motivates them to be mindful about the way their lifestyles affect the environment and work towards living in harmony with it. These individuals are more inclined to take ownership of their actions and engage in acts that benefit the common good when they feel competent and capable to do so.

It is also crucial to recognize that individual characteristics, cultural influences, and other external factors play a significant impact on PL. Their PL may differ significantly depending on beliefs, experiences, and degree of exposure to environmental issues. Nonetheless, addressing human needs can establish a climate that is conducive to promote environmental stewardship.

REFERENCES

- Abu Bakar, A., Mohamed Osman, M., Bachok, S., Ibrahim, M., & Abdullah, A. (2017a). Sustainable Well-Being: An Empirical Exploration on Human Interdependence with the Environment. *Advanced Science Letters*, 23(7), 6357-6361(5). <https://doi.org/https://doi.org/10.1166/asl.2017.9269>
- Abu Bakar, A., Mohamed Osman, M., Bachok, S., & Ibrahim, M. (2017b). Sustainable Well-Being Subjective Indicators: Human Interdependence with Other Humans and with the Environment. In B. McLellan (Ed.), *Sustainable Future for Human Security* (pp. 301-318). Springer, Singapore. https://doi.org/https://doi.org/10.1007/978-981-10-5433-4_21
- Abu Bakar, A., Mohamed Osman, M., Bachok, S., Hitam, M., & Abdullah, A. (2018). Human Interdependency for Sustainable Well-Being: Structural Invariance across Settlement Areas. *PLANNING MALAYSIA Journal of the Malaysia Institute of Planners*, 16(1), 281-293. <https://doi.org/http://dx.doi.org/10.21837/pmjournal.v16.i5.431>
- Abu Bakar, A., Osman, M. M., & Hitam, M. (2020a). Personality and Lifestyle Interprets External Condition to Environmental Behaviours. *PLANNING MALAYSIA Journal of the Malaysia Institute of Planners*, 18(1), 56-65.
- Abu Bakar, A., Osman, M. M., Hitam, M. (2020b). Attitudes and Pro-Environmental Behaviours: Determining Factor of Personality and Lifestyle. *PLANNING MALAYSIA Journal of the Malaysia Institute of Planners*, 18(1), 1-10. <https://doi.org/10.21837/pm.v18i11.704>
- Abu Bakar, A. (2022). Hierarchy of Needs and Subjective Wellbeing. *Planning Malaysia*, 20(4), 377-390. <https://doi.org/10.21837/pm.v20i24.1213>
- Garcia, D., Anckarsäter, H., Kjell, O. N. E., Archer, T., Rosenberg, P., Cloninger, C. R., & Sikström, S. (2015). Agentic, communal, and spiritual traits are related to the semantic representation of written narratives of positive and negative life events. *Psychology of Well-Being*, 5(1), 8. <https://doi.org/10.1186/s13612-015-0035-x>
- Kjell, O. N. E. (2011). Sustainable well-being: A potential synergy between sustainability and well-being research. *Review of General Psychology*, 15(3), 255-266. <https://doi.org/10.1037/a0024603>
- Koltko-rivera, M. E. (2015). *Rediscovering the later version of Maslow 's hierarchy of needs: Self-transcendence and opportunities for theory, research, and unification Rediscovering the Later Version of Maslow 's Hierarchy of Needs: and Unification. August.* <https://doi.org/10.1037/1089-2680.10.4.302>
- Maslow, A. H. (1943). *A theory of human motivation*. Psychological Review. <http://psychclassics.yorku.ca/Maslow/motivation.htm>
- Maslow, A. H. (1962). *Toward a Psychology of Being*. D. Van Nostrand Company.
- Maslow, A. H. (1970). *Motivation and Personality* (Second Edition). Harper & Row.
- Maslow, A. H. (1987). *Motivation and Personality* (Third Edition). New York: Harper and Row.

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