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Energy Policy Goals and Behavioural Change: Insights from Universiti Tun Hussein Onn Malaysia

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Energy policy goals, energy programmes, energy consumption behaviour, Malaysia public university.

Abstract

An energy policy is crucial for a university to manage its environmental impact, control costs, and enhance its reputation while promoting sustainability. Previous research shows that the behaviours of students and staff significantly influence energy consumption on campus, making it vital to address these behaviours within the energy policy framework. This study aims to identify the elements of Universiti Tun Hussein Onn Malaysia (UTHM) energy program and analyse how its goals affect the behaviour of students and staff. A qualitative approach was used, including semi-structured interviews with two energy management experts and a questionnaire survey of 100 respondents from the university. The interviews highlighted the importance of economic efficiency in the energy program, with the top three behaviours being temperature control, energy conservation practices, and prioritising economic efficiency. The primary objective of the energy policy is to achieve economic efficiency while maintaining comfortable living conditions. While the energy program has a significant influence on practices and cognitive norms, its impact on the broader energy culture is less pronounced.

1. Introduction

Electricity has become an integral part of society's daily life in the modern global economy. For instance, households rely on refrigerators to preserve food, while many university students utilise laptops, mobile phones, and the Internet for academic pursuits. According to a report by the International Energy Agency (IEA, 2022), energy consumption in the country is expected to grow moderately each year due to population growth. The entire industry is also overly dependent on electricity, and this will cause many issues that can worsen environmental problems (e.g., climate change). In addition to mitigating the effects that arise, the country needs to implement a strategy that can reduce national costs, as evident in the reduction in energy costs resulting from the wise use of electricity. Energy management in universities is pivotal for sustainability. Balancing cost efficiency with environmental impact, these institutions implement strategies to optimise energy use, aligning with global initiatives and fostering a culture of responsible consumption. Therefore, among the efforts that can be implemented is to emphasise exposure and appreciation of energy behaviour to the community. It can be

shaped by the university's effective energy management program. The findings will assist facility managers in creating a program that aligns with student and staff behaviour.

Students and staff are the leading group at UTHM, and they are responsible for wasting energy at the university. Their daily routines and lifestyle choices influence the university's energy consumption. Ishak et al. (2012) have stated that energy consumption behaviour (ECB) still needs to be discussed better among large organisations. Facility management in the university is the unit that is responsible for emphasising the importance of ECB among students and staff. They must create an energy program that aligns with policy and can significantly impact the behavioural aspects of students and staff. This is supported by previous literature, which cites that the best way to achieve energy conservation is by focusing on behavioural aspects, such as improving or changing the user's energy conservation behaviour (Alias et al., 2013; Ishak et al., 2016; Ishak et al., 2018). Therefore, the best way to save energy at university is to assess students' and staff's perspectives through their consumption behaviour.

UTHM has stated that the energy consumption baseline set in 2016 served as a reference for analysing subsequent usage. In 2023, UTHM aimed for a 25% reduction from the 2016 benchmark. However, by July 2023, the recorded consumption stood at 2,116,244.00 kWh, surpassing the target by 45.69%, with a gap of 1,452,585.00 kWh from July 2016. By November 2023, UTHM's energy consumption had exceeded the target by 0.26%. Considering December's energy consumption, the 2023 energy usage fell short of achieving the intended 25% reduction from 2016 levels. The university's largest energy consumers are its students and staff, who have the potential to adopt more efficient energy practices daily. Evaluating the energy program's influence on their behaviour is crucial data for facility managers. This becomes more important to them, especially when outlining the potential of energy savings. Effective execution of energy efficiency policies will significantly influence student consumption behaviour and contribute to energy conservation within the university (Yayla et al., 2021).

The weak success in reducing overall energy consumption clearly shows that our understanding still needs to be conclusive in studying the determining factors of individual energy consumption and its changes (Burger et al., 2015). Lack of practice causes their behaviour to still not be in line with the provided program and policy. Hence, this paper aims to identify the elements of the energy program held by UTHM through its energy policy goals and to analyse the impact of these goals on the behavioural aspects of UTHM students and staff. It focuses on staff and students' use of electricity (e.g., electrical equipment) and the university's current policies and programs that have been developed.

The facility manager plays a significant role in implementing and achieving energy policy goals within an organisation. Energy programs (e.g., quizzes, webinars, courses, competitions, and assessments) are one of the efforts to deliver the energy policy to a better understanding for students and staff. Each program has a different impact, whether it affects material culture, cognitive norms, or energy practices. Therefore, this research can help facility managers identify programs that are compatible with policy goal requirements and can have a significant impact on participants. Finally, it can save energy in a university by controlling user behaviour.

Students and staff play the leading role in using energy in the university. They determine how universities use energy. Therefore, this research can provide them with some awareness or knowledge about how to use energy efficiently and contribute to and support the programs held by the Sustainable Campus Unit at UTHM.

2. Literature Review

2.1 The Energy Policy Goal

According to the IEA (2022), nearly every aspect of daily life and corporate activity relies on energy. Therefore, creating a long-term energy plan is best accomplished through cooperation between all government agencies and outreach to the public and companies. An essential component in this process is those who produce energy statistics. Effective utilisation of this data is required for both the subsequent modelling work and the policy planning process. Therefore, statisticians must be successfully incorporated into the methods that are finally developed for policymaking and, later, for monitoring policy (IEA, 2022).

Figure 1 shows the energy policy goal by Hartwig et al. (2023). This goal is to integrate an energy justice framework that addresses the inherent justice failings into energy policy decision-making. The (3E + S) framework encompasses definitions of Energy security, economic efficiency, Environment, and Safety. These four policy goals serve as a guide for energy policy decisions. The goal is to harmonise the four goals by considering all four energy and resource policies and program dimensions.

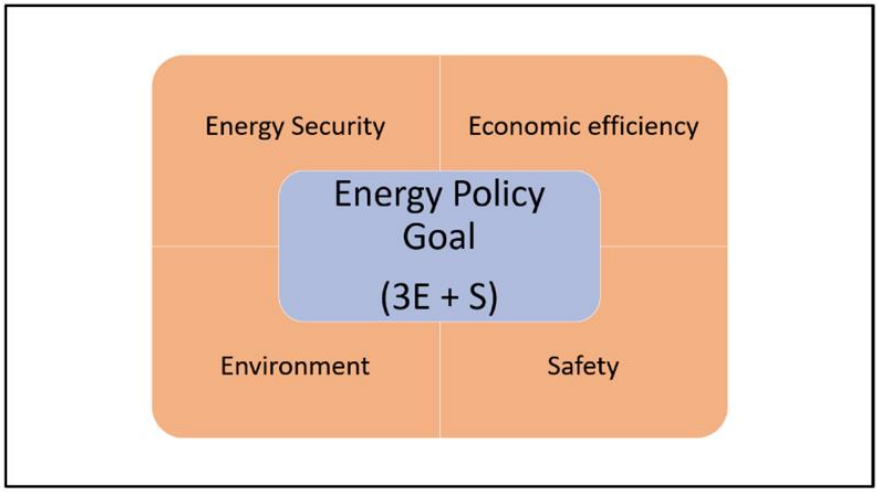

Fig. 1 *Energy policy goal (Source: Hartwig et al., 2023)*

2.2 University Energy Programs

A program is a planned series of activities or events to achieve a specific goal or objective. For example, a program can be a schedule of events for a conference, a curriculum for an educational course, or a set of activities for a community development initiative. In the HEI aspect, the university's senior management needs the program as a platform to convey instructions from policy to users. Typically, the university will issue a policy that uses general language that requires explanation to the user before it can be applied. The policy issued by the university will be implemented by faculties/units by creating a program for users (e.g., quizzes, webinars, courses, competitions, and assessments). To make the policy successful, the program carried out by faculty/units should have an impact on the user, enabling them to follow the policy instructions.

(a) Quiz

The quiz can be one of the program's ideas from faculty/units to test users' knowledge. It is good to know before starting an education program. In the energy aspect, the quiz will help faculty/units understand how much people know and care about electricity, how they use it daily, and what people's current level of awareness is. With a good questionnaire, faculty/units will have data on what is lacking and where there is a strong part, and they can create an excellent program to fill in all the missing parts. To make the policy successful, faculty/units need many participants among students and staff. Therefore, to gain attention, faculty/units can provide prizes for participants with high scores on this quiz. Quiz is one of the good programs run by the Ministry of Education, which holds an energy efficiency quiz in every state in Malaysia in conjunction with the 2023 Green Technology Festival.

(b) Webinar

Previous studies have shown. Students are generally satisfied with webinars, as stated by Gegenfurtner et al. (2019); students, instructors, and lecturers typically express satisfaction or enjoyment with webinar-based learning environments. Therefore, webinars can also serve as a platform for conveying knowledge about energy to university students and staff. To assess the level of effectiveness of the webinar for the listeners, the effectiveness can be evaluated by comparing the changes in participants' knowledge and abilities before and after attending the webinar. Therefore, every webinar that faculty/units conduct will receive feedback on whether it adds knowledge, raises awareness, or remains the same.

(c) Course

Schools, colleges, universities, or online learning platforms offer courses. Students participate in classes to learn additional knowledge and earn academic credit. Engaging, relevant, and interactive courses can enhance staff satisfaction and participation. A good course will have a good impact on staff. This is proven by a sharing program on Sustainable Energy Management Systems (SEMS) run by Universiti Malaysia Sarawak (UNIMAS) for staff after their energy manager completes the Certified Energy Manager course. Therefore, staff can apply good energy conservation practices in their daily work at the university and in the real world.

(d) Competition

Competition can be a platform to promote excellent energy practices in daily life. The university can offer a high-demand prize to attract students and staff to participate in the competition. For example, competition in creating a video of ‘‘the best use of electricity in your daily life’’ and post it on social media by tagging Sustainable Campus Unit (SCU). Every participant will explore and practice by themselves what the correct way to use energy is. With the prevalence of videos on social media, many people will be more aware and want to know about this matter. This program was also held by the Malaysia Energy Commission, which ran a competition for Energy Efficiency 2023 among schools in Malaysia. The Energy Efficiency Challenge began in 2014 and has become an annual event of the Energy Commission following the positive response from schools.

(e) Assessment

Energy assessment can be one of the platforms to evaluate the sustainability level of current energy usage. The university will establish the gold standard in managing its energy use. Energy assessments will identify opportunities for energy efficiency improvements within university facilities. They help identify areas of energy waste, inefficient equipment, or outdated systems. By analysing energy consumption patterns and conducting facility audits, universities can identify specific measures to reduce energy consumption and improve overall energy efficiency. Assessments will help the university's Sustainable Campus Unit (SCU) gather information on whether it has achieved a satisfactory level of energy use or still needs a more effective strategy. This is supported by Universiti Teknikal Malaysia Melaka (UTeM) and Universiti Teknologi Malaysia (UTM), which have achieved EMGS 3 stars due to their efforts in conserving energy.

(f) Campaign

Campaigns help educate students, faculty, and staff about the importance of energy conservation, ways to reduce consumption, and the impact of individual actions on energy use. They encourage behavioural shifts, promoting energy-saving habits such as turning off lights when not in use, using energy-efficient appliances, optimising heating and cooling systems, and practising responsible energy use. Energy-saving campaigns can significantly reduce utility costs for the university by lowering overall energy consumption. Funds saved can be redirected to other important academic or sustainability initiatives. This effort is aligned with the UTM program.

(g) Meeting

Meetings can help allocate resources effectively for energy-saving projects. Universities can prioritise initiatives that maximise energy efficiency by discussing budgets, resource needs, and potential funding sources. It can also educate stakeholders about the importance of energy conservation. They can disseminate information on the impact of energy use, showcase successful case studies, and motivate individuals to participate in energy-saving efforts. The meeting is also one of the efforts by UTeM to achieve energy savings. A regular meeting can facilitate the monitoring and evaluation of ongoing energy-saving initiatives. They allow for the review of progress, identification of challenges, and adjustments to strategies based on feedback and results.

2.3 Energy Consumption Behaviour

This research focuses on the behavioural aspects of students and staff of UTHM to assess potential savings in the university. The Energy Cultures framework introduced by Stephenson et al. (2010) suggests that energy consumption behaviour can be explained from its most fundamental level by examining the interactions between cognitive norms (e.g., beliefs, understandings), material culture (e.g., technologies, building form) and energy practices (e.g., activities, processes). Stephenson et al. (2010) have found this framework helpful in identifying potential influences on behaviour and possible interventions. Stephenson et al. (2010) define "Culture" as a diversity of societal values, beliefs, knowledge, practices, technology, and other cultural determinants. There are some intriguing similarities between these approaches and the concept of "Energy Cultures" created by Stephenson et al. (2010). They suggested that distinct integrated behavioural patterns, or "lifestyles," should be distinguishable based on variations in material culture, cognitive norms, and daily routines. According to this method, behaviour is viewed as a composite of those three key elements that interact to create a self-reinforcing system that develops strong habits.

These behavioural elements are very engaging. Cognitive norms have a significant impact on people's technology preferences and their practices. People's possible energy practices and cognitive norms are strongly

influenced by material culture, and how the technology is used is determined by their energy practices, which also affect people's beliefs and understandings.

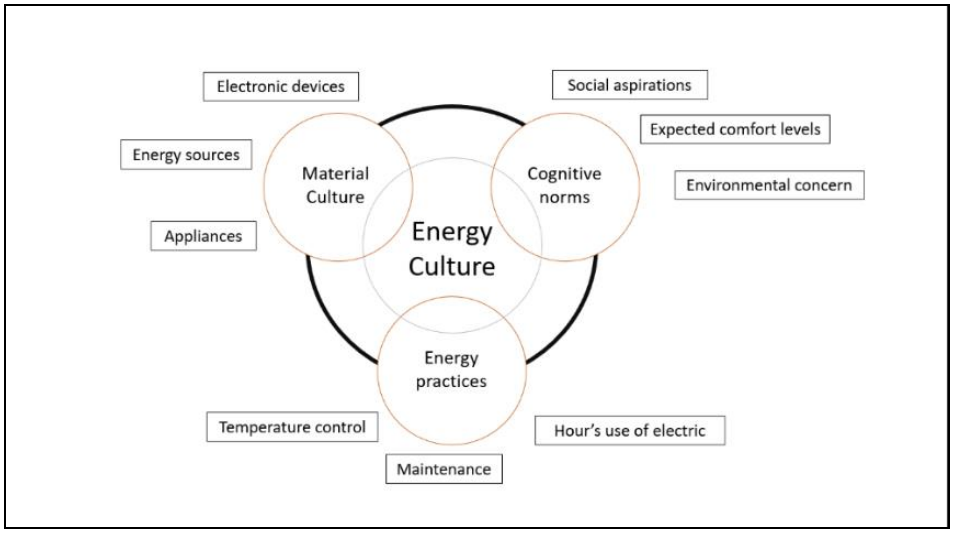

Fig. 2 *Energy culture framework (Source: Stephenson et al., 2010)*

For example, behaviour relating to how people use air conditioning can be characterised partly by their values, aspirations, beliefs and understanding of the consumer. In addition, it also touches on aspects of the construction, such as the types of aircons used, the number of aircons used, temperature settings, the times aircons are used, and maintenance (see Figure 2). This figure only shows a few characteristics for the sake of simplicity. The relationship between these factors may include whether people have a sufficient understanding to maintain their air conditioning, how their aspirations influence their choice of cooling method, and how their comfort level affects their ability to control the temperature.

Each of these three core concepts is clear as an interacting system. The material culture of a household or an organisation can be understood as a technical system. At the same time, energy practices can systematically reveal the interactions between individual, social, and institutional behaviours, and cognitive norms can be understood as an attitude/value/belief system. These are co-constitutive of behavioural outcomes (Stephenson et al., 2010).

The three concepts form the core of the Energy Cultures framework, and their interactions extend to a broader systemic level, influencing behaviour. Many factors can affect energy consumption behaviour (e.g., personal preferences, cultural norms, economic considerations, technological advancements, and environmental awareness). Each aspect of material culture, energy practice or cognitive norm is impacted in some way by these broader influences. For example, upbringing, demographics, and education affect cognitive norms around aircon use. Factors such as income level, technological availability, and laws and regulations may influence the choice of air conditioning type. At the same time, temperature control may be influenced by policy, awareness programs, and social marketing campaigns.

Figure 3 shows the conceptual framework of the study. It explains how this study will be conducted and connects all the elements used. It starts by examining the relationship between the energy program carried out by the SCU unit, which includes quizzes, webinars, courses, competitions, assessments, campaigns and meeting the energy policy goal. Then, examine the impact of energy policy goals on energy culture among students and staff of UTHM.

Research in Management of Technology and Business Vol. 7 No. 1 (2026) p.934-943

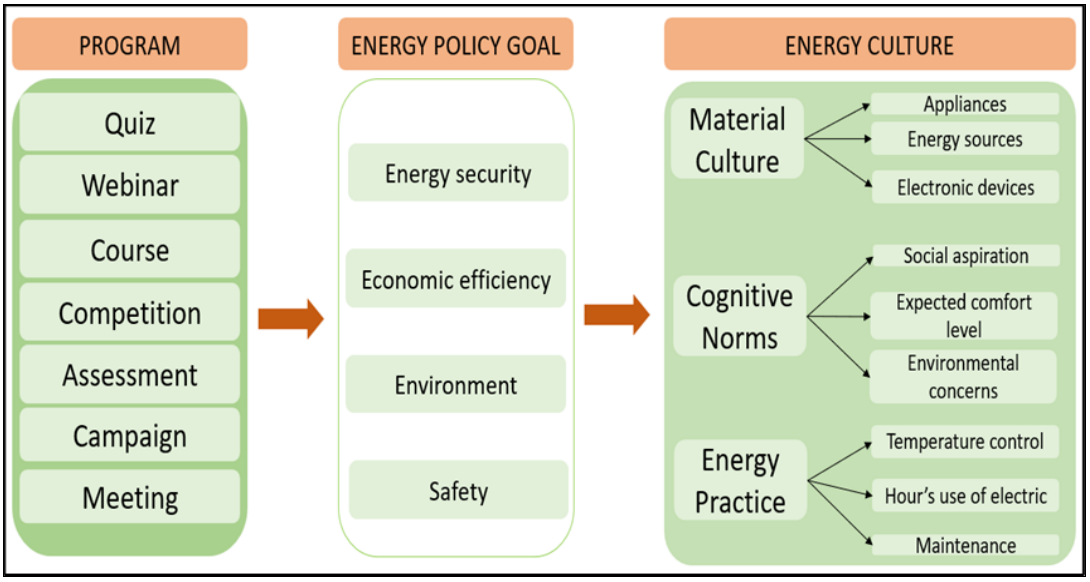

Fig. 3 *Conceptual framework*

3. Research Methodology

This research adopts three main stages: stage 1, which includes the background of the study. Stage 2 focuses on achieving the first research objective. Finally, stage 3 focuses on achieving the second objective. Stage 1 focuses on the background of the study, including determining the problem statement, setting the research objective, and developing the research methodology.

Stage 2 focuses on Objective 1, identifying the elements of the energy program held by UTHM through energy policy goals. A qualitative method was selected as a research design tool to achieve the objective. The selected tools include semi-structured interviews with two experts in energy management at UTHM. Content analysis was used to analyse the data. The expected outcome from this stage is the implementation of the energy program elements held by UTHM through its energy policy goals.

Stage 3 focuses on the second research objective, which is to analyse the impact of the energy policy goal on the behavioural aspects of UTHM students and staff. A questionnaire survey was conducted among students and staff in UTHM, employing a quantitative method. A total of 100 respondents participated in the data collection. The questionnaire design is based on a combination of energy policy goals and aspects of energy culture. Descriptive analysis was used to rank the data. The expected outcome of this objective is the impact of energy policy goals on the behavioural aspects of UTHM students and staff.

Table 1 *Overall Research Methodology*

Objectives	Methods	Variables	Tools	Output
Identifying the elements of the energy program held by UTHM through energy policy goals	Qualitative: Semi-structure interview with 2 experts of energy management in UTHM	Element of energy program by SCU	Content Analysis	Element of energy program through energy policy goals
To analyse the impact of the energy policy goal on the behavioural aspects of UTHM students and staff	Quantitative: Questionnaire to 100 students and staff of UTHM	Rank of energy policy goals impact to behavioural aspect	Descriptive Analysis	Impact of energy policy goals towards UTHM students and staff behavioural aspect

4. Results and Discussion

4.1 Elements of the Energy Programs

A semi-structured interview was conducted with two respondents from the energy management experts in UTHM, Prof. Madya Ir. Dr Mohd Fairouz Bin Mohd Yousof (Energy Manager of SCU) is responsible for Respondent One and Ts. Dr Khairul Rijal Bin Wagiman (one of the Energy Management and Efficiency Committee of UTHM) for respondent 2.

Table 2 illustrates the alignment between the UTHM energy program and four energy policy goals as reported by Respondent 1 and Respondent 2. Red dots indicate the selected answer for Respondent 1, while green dots indicate the answer for Respondent 2. Economic Efficiency is the highest energy policy goal that matches the energy program, with 24 votes or 52.17% of the total votes. Energy security received ten votes, accounting for 21.74%. Nine votes, or 19.57 per cent, were selected for the environmental goal, while the least popular goal is safety, with three or 6.52 per cent of the total votes.

Table 2 *Matching the UTHM energy program and the energy policy goal from the expert*

ENERGY PROGRAM		ENERGY POLICY GOAL			
		Energy Security	Economic Efficiency	Environment	Safety
Quiz	UTHM energy quiz	●	● ●		
Webinar	Energy efficiency: The fifth fuel	●	● ●		
	Importance of E-Waste for the sustainable environment in the electrical engineering sector			●	●
	How far Covid-19 pandemic affecting energy industry	● ●	● ●		
Course	*Amalan hijau di pejabat*		● ●	●	
	Audit dan pengurusan tenaga		● ●	●	
Competition	My green office/home selfie			● ●	
	Poster digital penjimatan tenaga		● ●		
	Tiktok short video ''Let's Go Green!''			● ●	
Assessment	Energy consumption Management Gold Standard (EMGS)	● ●	● ●	● ●	● ●
Campaign	Energy information board		● ●		
	Sticker saving energy		● ●		
	Energy-Saving Campaign by "DELAMPING"		● ●		
Meeting	*Mesyuarat Jawatankuasa Pengurusan dan Kecekapan Tenaga Universiti Bil 1/2023*	● ●	● ●		
	Mesyuarat jawatankuasa pelaksana pengurusan dan kecekapan tenaga universiti (jppktu) bil. 1/2023	● ●	● ●		
TOTAL		10	24	9	3

Legends:

● Prof. Madya Ir. Dr. Mohd Fairouz Bin Mohd Yousof (Energy Manager of UTHM)

● Ts. Dr. Khairul Rijal Bin Wagiman (Energy Management and Efficiency Committee)

4.2 Impact of Energy Policy Goal towards Behavioural Aspects

Researchers conducted a questionnaire survey with 100 respondents, including students and staff at UTHM, to analyse the impact of the energy policy goal on the behavioural aspects of UTHM students and staff. The respondents included 50 students, 25 management staff members, and 25 academic staff members, randomly selected from the UTHM area. The questionnaire consisted of two parts: A and B. Part A included simple demographic questions, such as faculty, year of study, and frequency of days spent at the university per week. Part B focused on the energy culture of students and staff, based on energy policy goals, consisting of 36 questions that cover the combination of four energy policy goals and three energy cultures.

According to Table 4.2, 57.0 per cent, or 57 respondents, have yet to participate in any SCU programs. Twenty-five respondents, or 25.0 per cent, have participated in SCU programs 1-2 times. Twelve respondents, or 12.0 per cent, have participated 3-4 times. Additionally, five respondents, or 5.0 per cent, have attended SCU programs 5-6 times, and one respondent, or 1.0 per cent, has joined SCU programs more than six times. Consequently, half of the total respondents have never participated in a program organised by SCU (refer Table 3).

Research in Management of Technology and Business Vol. 7 No. 1 (2026) p.934-943

Table 3 *Programs participated by students and staff held by SCU*

	Frequency	Percent	Valid percent	Cumulative percent
Never	57	57.0	57.0	57.0
1-2 times	25	25.0	25.0	82.0
3-4 times	12	12.0	12.0	94.0
5-6 times	5	5.0	5.0	99.0
More than 6 times	1	1.0	1.0	100.0
Total	100			

Table 4.3 shows the rankings of UTHM's energy behaviour based on energy policy goals obtained from questionnaire results. The highest mean of 4.37 is for G2ECCTem, which represents temperature control under energy practice with the energy policy goal of economic efficiency. Following closely are G2ECCMtn and G2ECBCom, representing maintenance under energy practice and expected comfort level under cognitive norms, with a mean of 4.32, aligning with the energy policy goal of economic efficiency. G1ECBCom, representing the expected comfort level under cognitive norms in relation to the energy policy goal of energy security, has the lowest rank, with a mean of 3.08. The third and second rankings similarly belong to cognitive norms and the environmental energy policy goal. One is G3ECBSoc, representing social aspiration with a mean of 3.21, and the other is G3ECBEnv, representing environmental concern with a mean of 3.09.

Table 4 *Energy behaviour ranks based on energy policy goals*

Code	Energy Policy Goals	Energy Culture	Mean	Rank
G2ECCTem	Economic Efficiency	Energy practice: temperature control	4.37	1
G2ECCMtn	Economic Efficiency	Energy practice: Maintenance	4.32	2
G2ECBCom	Economic Efficiency	Cognitive norms: Expected comfort level	4.32	2
G1ECCHou	Energy Security	Energy practice: Hour's use of electric	4.31	4
G1ECAEdev	Energy Security	Material culture: Electronic devices	4.31	4
G1ECAEso	Energy Security	Material culture: Energy sources	4.31	4
G2ECAEso	Economic Efficiency	Material culture: Energy sources	4.30	7
G2ECAEdev	Economic Efficiency	Material culture: Electronic devices	4.29	8
G2ECBEnv	Economic Efficiency	Cognitive norms: Environmental concerns	4.29	8
G2ECBSoc	Economic Efficiency	Cognitive norms: Social aspiration	4.28	10
G4ECCMtn	Safety	Energy practice: Maintenance	4.27	11
G1ECCTem	Energy Security	Energy practice: temperature control	4.27	11
G2ECCHou	Economic Efficiency	Energy practice: Hour's use of electric	4.25	13
G4ECCHou	Safety	Energy practice: Hour's use of electric	4.24	14
G1ECAApp	Energy Security	Material culture: Appliances	4.23	15
G1ECBEnv	Energy Security	Cognitive norms: Environmental concerns	4.23	15
G3ECAApp	Environment	Material culture: Appliances	4.22	17
G1ECBSoc	Energy Security	Cognitive norms: Social aspiration	4.21	18
G3ECAEdev	Environment	Material culture: Electronic devices	4.20	19
G4ECBEnv	Safety	Cognitive norms: Environmental concerns	4.16	20
G3ECAEso	Environment	Material culture: Energy sources	4.15	21
G1ECCMtn	Energy Security	Energy practice: Maintenance	4.15	21
G4ECBCom	Safety	Cognitive norms: Expected comfort level	4.11	23
G3ECBCom	Environment	Cognitive norms: Expected comfort level	4.10	24
G4ECBSoc	Safety	Cognitive norms: Social aspiration	4.10	24
G3ECCTem	Environment	Energy practice: temperature control	4.05	26
G3ECCHou	Environment	Energy practice: Hour's use of electric	4.04	27
G4ECAEso	Safety	Material culture: Energy sources	4.01	28
G4ECCTem	Safety	Energy practice: temperature control	3.88	29
G4ECAApp	Safety	Material culture: Appliances	3.78	30
G2ECAApp	Economic Efficiency	Material culture: Appliances	3.69	31
G3ECCMtn	Environment	Energy practice: Maintenance	3.68	32
G4ECAEdev	Safety	Material culture: Electronic devices	3.45	33
G3ECBSoc	Environment	Cognitive norms: Social aspiration	3.21	34
G3ECBEnv	Environment	Cognitive norms: Environmental concerns	3.09	35
G1ECBCom	Energy Security	Cognitive norms: Expected comfort level	3.08	36

The economic efficiency promoted by SCU in developing an energy program aligns with Objective 2, which is to achieve economic efficiency. This objective has the highest impact on the energy behaviour of UTHM students and staff. It is optimistic that the program focuses on behavioural aspects. However, the demographic results reveal that most respondents have never participated in the energy program. This suggests that the SCU energy program is not the primary factor influencing good economic efficiency behaviour among students and staff.

The emphasis on energy practices and cognitive norms is more essential than material culture. This is because people are easily influenced by their awareness and habits. Material culture includes specific equipment or appliances that not everyone can afford. High energy efficiency equipment or appliances, of course, come with a higher price tag. For example, UTHM students on a budget may opt for a budget table fan instead of a 5-star energy-efficient one. Therefore, they are more influenced by energy practices and cognitive norms.

The current focus of the two parties' goals is to address the increasing monthly energy bills. To resolve this issue, SCU must emphasise energy policy goals, adjust how the program is implemented, and ensure it reaches all UTHM citizens. Although the energy policy goals align with the impact on citizens' behaviour, the energy program needs refinement. While students and staff acknowledge the importance of economic efficiency, their daily practices do not reflect this, resulting in increased electricity bills in 2023. To become a sustainable university, SCU can also develop an energy program that addresses three additional energy policy goals: energy security, environmental sustainability, and safety.

5. Conclusion

To achieve potential energy savings at UTHM, the SCU needs to enhance its approach to creating and promoting a program that encourages students and staff to participate. By focusing on economic efficiency and increasing the number of participants, the program can educate them more deeply about the importance of saving electricity costs in the university and how it is linked to their behaviour. The highest energy policy goal is economic efficiency, so energy management in UTHM has emphasised cost savings in energy in most of its programs. Additionally, the SCU consistently strives to reduce the university's energy costs on a monthly and annual basis. These energy-saving efforts have created a positive reputation among the community and stakeholders. Being recognised as a sustainable institution can attract environmentally conscious students, faculty, and donors who value responsible practices. According to a survey, many respondents agreed that lowering the air conditioning temperature results in higher electricity bills. The second-highest response was that individuals should not use the fan and air conditioner simultaneously to save on electricity costs. Moreover, scheduling maintenance to save energy costs ranked third among the 36 questions. All these behaviours are based on the second energy policy goal, economic efficiency, showcasing the conscientiousness of UTHM students and staff about energy costs at the university.

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Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** Muhammad Syahmirul Ismail, Mohd Hafizal Ishak*;* ***data collection:*** Muhammad Syahmirul Ismail*;* ***analysis and interpretation of results:*** Muhammad Syahmirul Ismail, Mohd Hafizal Ishak*;* ***draft manuscript preparation:*** Muhammad Syahmirul Ismail, Mohd Hafizal Ishak, Azlina Md Yassin, Nurul Afiqah Ahmad**,** Haidaliza Masram, Puvaneswary Thanaraju*. All authors reviewed the results and approved the final version of the manuscript.*

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