Perception of Academics Wearing Hijab: A Comparison Study amongst Public Universities in Malaysia

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ABSTRACT

Most female academics in Malaysian public universities wear a headscarf or hijab, one of the professional dress codes in the government sector. Concerning this, it is important to understand how the online background setting affects female academics wearing hijabs while they perform online teaching and learning. Studies in environmental psychology demonstrate that the attributes of a room influence individuals within that environment referred to as the 'Product Effect' approached and was utilised to assess if the online background setting influences the perceptions of female hijab and female non-hijab lecturers during online teaching amongst Malaysian public universities. In this study, 520 questionnaires were distributed via an online survey. Female lecturers model serves as subjects in the study, which uses online interior class background effects as a stimulus. The survey questions were mostly based on the Times Higher Education - QS World Universities Rankings assessment criteria, which include four themes: research and citation quality, teaching quality, industry revenue, and worldwide orientation. The data will be analysed using multivariate analysis of variance in SPSS software. Results demonstrate that gender is the factor among the two academicians with online background settings between female lecturers and female lecturers with hijabs in Malaysian Public Universities during online teaching. In addition, research demonstrated that students' perceptions of female lecturers were the same whether they wore or did not wear a headscarf. Furthermore, these results potentially provide new knowledge to the field of environmental psychology, especially for academic attire or appearances during online teaching. Aside from that, this study will promote a better education online platform to satisfy the Malaysian Education Blueprint 2015-2025 for Higher Education and improve lecturer professionalism during online teaching to attain quality education through SDGs. The present approach of Room-Product-Effect may be used for the virtual interior room effect in the field of online environmental psychology.

Keywords: Environmental psychology, Person perception, Hijab perception, Room Product Effect, Online Background Setting,

INTRODUCTION

As the Malaysian higher education sector adopted online learning nearly five years ago, educators have needed to adapt to the new standards of instruction. Although these methods offer benefits, students in design fields engaging in these activities encounter various psychological impacts due to the lack of direct interaction and real-world links with their instructors. Consequently, we are stepping into a new age of education supported by ground breaking technology, which has altered how information is conveyed in

Malaysian higher education institutions. Despite the effective adoption of open and distance learning for more than two years, several enhancement measures are still required. On a positive note, ODL has shown that learning has no limits as the emerging standard for teaching and learning methods (Abdul Ghafar, 2022). Most students experienced moderate stress levels during the online learning phase. Consequently, students may effectively handle and gradually embrace online learning (Jamil, 2022). Figure 1 depicts an online webinar conducted through a desktop computer screen utilizing virtual tools like Google Classroom, Google Meet, webinars, Tutor Room, and more to engage, converse, and facilitate the teaching and learning experience.

Figure 1. Academic with hijab during online webinar and conferencing or class.

source: iStock Photo

The adoption of the hybrid model (physical and digital methods) in the educational process at Malaysian public universities (hereafter referred to as MPUs) is a component of the new normal learning strategies in the post-COVID-19 endemic context. In this regard, as MPUs increasingly depend on online classes, it is essential to comprehend how the visual learning setting influences learners' views of their instructors during virtual education. In the online class format, the inclination of academics towards online background effects has increasingly supplanted the reliance on the physical setting during online teaching and learning (OTL).

As stated by Koet, & Aziz, (2021), few studies have explored the viewpoints of students and teachers in higher education regarding online teaching and learning. Earlier research indicates that one of the elements affecting teachers' and students' perceptions of distance education is the learning environment. Studies in environmental psychology show that features of an environment (such as a room) are conveyed to an individual within that environment, referred to as the 'Room effect' (Idris, 2014). Canter's research identified that the look of each room influenced how the model was perceived, including aspects like intelligence, financial status, social position, and mental condition (Canter, 1977). This approach has been effectively employed in various applications, like assessing the impact of automotive market research (Effendi, Hashim, Whitfield, & Jackson, 2009) to aid in the creation and enhancement of new ideas. In addition to the room effect, there is also a product effect. (Effendi &; Whitfield, 2012).

Nevertheless, "Product-Effect" studies have yet to explore online teaching and learning, and existing research on online teaching and learning has not examined the impact of the online background environment. Thus, the room product effect approach will be employed to assess whether there is a gender influence of online background setting on two aspects of perceptions regarding MPUs design lecturers during OTL, specifically distinguishing between a female lecturer with and without a hijab. When applying the Room

Effect method, online background effects during OTL serve as the stimulus, while the human model (lecturers) functions as the subject.

LITERATURE REVIEW

Hijab or Headscarf

The subject of women's apparel has garnered media and academic interest for a considerable period. The hijab is derived from the Arabic term meaning “shell” and denotes the covering of a woman's body, excluding the face, hands, and feet (Dunkel et al., 2010). While it served a practical purpose for women in the pre-Islamic era, when affluent women primarily donned it during public appearances, the significance of the veil or hijab has been shaped and influenced by socio-political narratives over time (Woldesemait, 2013). The concept of "enclothed cognition" was introduced by Adam and Galinsky (2012), who also examined how clothing affects the mental processes of the wearer. Consequently, clothing influences the identity that the individual decides to embrace: it needs to be donned by someone and carry symbolic significance.

Initial perceptions frequently rely on rapid assessments, establishing the groundwork for social evaluations and stereotypes that instinctively classify individuals by race, age, and gender (Nelson, 2005). Such impressions may hinder the development of perceptual schemes, social interactions, and interpersonal communication (Hughes & Baldwin, 2002). The clarity of these categories facilitates the generalization of individuals or groups. Apparel is a noticeable means of expression that acts as a non-verbal communication method for the mentor. As per Susan Fiske's SCM framework (Fiske, 2018), competence refers to intelligence and ability, while interpersonal attraction gauges if we "like" someone else, defined as a favorable attitude or assessment of that person (McCroskey and McCain, 1974). Even though a woman in a hijab might be viewed as capable and virtuous, individuals do not have to favor her based on initial perceptions since task attraction and competence are related concepts. The reverse might apply to women who choose not to wear the hijab, indicating that, in contrast to those who do, individuals may find them more likable but perceive them as less competent and warm. Quick judgments or initial perceptions hinder interpersonal communication, shape the formation of perceptual schemas, and significantly affect women's self-efficacy in terms of career opportunities over time. Consequently, self-efficacy begins to forecast organizational commitment as well. Angerosa (2014) explored the concept of clothing as a means of communication, analyzing stylish, informal, and formal wear and their relationships to person perception theory (Smith & Collins, 2009) and social identity theory (Tajfel & Turner, 1979; Tajfel, 1974). The research indicates that individuals convey their group identities and self-image via their clothing. The viewpoints and interpretations of individuals who analyze clothing shape its symbolic meaning.

The hijab represents Muslim identity, showcasing the wearer’s commitment to Islam and connection to the Muslim community (Dunkel et al., 2010; Jardim & Vorster, 2003). Attire reflects self-awareness, and in the context of the hijab, it signifies the social identity of the individual wearing it (Den Heyer & Schelling, 2006). The hijab has evolved into a significant means for Muslim women to express their identity and has changed in recent times (Nurzihan, 2014). According Grine and Saeed (2017) carried out a study on Muslim women in Malaysia to determine if wearing the hijab was motivated by religious duty or style. They discovered that most women view the hijab as a religious duty instead of a style choice. The research indicates that although there is potential for changes in hijab design in Malaysia, the main reason for wearing hijab is associated with religious duty. Saeed et al. (2021) conducted a survey among Malaysian Muslim women in universities to explore the elements affecting their intention to buy hijabs. They discovered that religious dedication, contentment, fashion sense, and source of information greatly affect buying intention.

Malaysian Public Universities

Public universities in Malaysia receive funding from the Government and operate as self-managed entities. Besides the University of Malaya and the MARA University of Technology, which were founded by distinct enabling Acts of Parliament, the remaining public universities in Malaysia were established through

executive order under the stipulations of the Universities and University Colleges Act 1971 [Act 30] (online version as of 1 August 2012). Until lately, the Ministry of Higher Education oversaw seven institutions designated as "University College". These have since transitioned to full universities, and there are presently no public university colleges. Public institutions are higher education entities financed by the government and fall under the authority of the Ministry of Education Malaysia. They can be categorized into three main groups: Research Universities, Focused Universities, and Comprehensive Universities. At present, there are 20 institutions of this kind. In multicultural nations, certain students at MPUs are non-Muslim, except for Universiti Teknologi Mara and certain Malaysian Islamic Public Universities like UIAM and USIM, where most students (90%) are Muslim. Other than that, there have been no studies conducted to evaluate how non-Muslims viewed hijab instructors during online education at the college level. Most female lecturers in Malaysian public universities wear hijab. Consequently, they significantly influence academic perspectives on wearing the hijab during online teaching and learning sessions.

Figure 2. 20 Malaysian Public Universities (MPUs)

Room Effect Overview

A common component of this approach is the emphasis on the product itself, and how people view and assess it, rather than the individual connected to the product; in other words, the impact the product has on how people perceive its owner. An alternate approach that might be employed is environmental psychology. The influence of the surroundings on an individual's impressions of a space is known as the "Room Effect." Various theories on environmental psychology approaches were discovered after a review. Canter, West, and Wools' "Room Effect" makes a compelling case that people can also associate their personality type with their environment (Canter, West, & Wools, 1974).

The methodologies supported the conclusion that a person's judgment is influenced by the environment in which they are positioned. Furthermore, Lawrence and Leather (1999) discovered that environmental

influences affect the stability of an occupational stereotype. Images from a study of the effects of backgrounds on people's judgments illustrate the 'Room Effect' method, which holds that an individual's judgments are influenced by the room in which he or she is placed (Canter, West, and Wools, 1974).

By presuming that persons and their physical situations are similar, the experiment demonstrates how inference rules operate. To get the results, the researchers used pictures of people of different backgrounds in three trials. Applications of the Room Effect approach are shown in Figure 3. Line drawings of rooms with people seated were utilised in the first trial, and color slides of real rooms were used in the second. The rooms were judged by both architecture and non-architecture students. In the last experiment, human head and shoulder photos were superimposed on different room backdrops. Without being made aware of the modifications, respondents were asked to score the individuals shown in the drawings. It was demonstrated that the results varied considerably according to the situation in which the subjects were evaluated (Canter, 1977). The findings demonstrate that people's interactions with the environment are influenced by the meanings they assign to it and that this has an impact on expectations for behavior within a specific situation.

Maslow and Mintz (1956) observed a similar Room Effect study in which the characteristics of the room affected assessments of people's faces associated with the room. According to Wilson and Mackenzie (2000), the identical faces in a "beautiful" room were thought to have more "energy" and "well-being" than those in an "average" room, which were thought to have more "energy" and "well-being" than those in an "ugly" room. Likewise, the study found a connection between the expected qualities of the professor who would be housed in a professor's room and the room's design (Campbell, 1979). Accordingly, research on product design provided compelling evidence for the existence of a Product Effect, comparable to the Room Effect (Hashim, 2015).

Figure 3. The room-effect method. Source: Adapted from “Psychology of Place” by Canter, 1977, The Architectural Press, London. Reprinted with permission

For this study, the Room Effect approach was used and adapted to ‘picture stimuli.' However, because the study focused on participants' reactions to judging and perceiving the human image in the interior space in a webinar, questions about human personality had to be included. As a result, a review of personality studies was carried out.

Extending the room effect into the product- effect

Previous research examined the impact of residential homes or working offices on people's attitudes. Subsequent research has expanded the Room-Effect to what is known as the Room-Product Effect. The Room-Product-Effect shows that the Room-Effect extends beyond the scope of rooms or settings to developed items. Several research (Rollman, 1980; Chowdhary, 1988; Butler & Roesel, 1989; Phillips & Smith, 1992; Morris et al., 1996; Sebastian & Bristow, 2008; Lightstone et al., 2011; Tamura & Hirabayashi, 2013; Shepherd & Yeon, 2022) have discovered that teacher attire style influences pupils' perceptions of the teacher. The findings of Rollman's (1980) study demonstrated that male and female teachers' dress choices had a substantial influence on pupils' perceptions of them. Furthermore, children provided higher evaluations to professors who wore specific kinds of clothes. Students consider male and female professors who dress casually as more approachable and adaptable, while those who dress formally as the most organized

(Rollman, 1980). According to Chowdhary's findings, children rated the same teacher more positively when they wore Western clothing than when they wore Indian clothing (Chowdhary, 1988).

Butler and Roesel's (1989) study found that female teachers who dressed casually were regarded as more approachable, less knowledgeable, and more acceptable. According to Phillips and Smith's research, children thought informal clothes conveyed instructor friendliness, fairness, and interestingness. Teachers who dressed casually were viewed as being more friendly, organised, enjoyable, understanding, and disciplined. Teachers who dressed conservatively were seen to be well organised, knowledgeable, and disciplined (Phillips & Smith, 1992). Morris et al., (1996) evaluated the effect of the teacher's clothes on students' impressions of college lecturers during a live lecture setting. The study found that the more formal the teacher's attire (for example business suit, formal shoes), the higher the students' assessments of their ability, particularly female college students' opinions of Female instructors (Morris et al., 1996). According to Sebastian and Bristow's (2008) findings, professors' dress style had a significant impact on how business students evaluated them, with formally dressed professors perceived as more professional than informally dressed ones. According to Sebastian and Bristow (2008), professors who dress informally are viewed as more approachable than those who dress professionally. Lightstone, Francis, and Kocum's (2011) research found that university professors who dressed professionally were seen as more credible than their less formally dressed colleagues.

Furthermore, males in formal attire were less likable than females in formal dress as well as males and females in casual styles of dress (Lightstone et al., 2011). Tamura and Hirabayashi found that teachers dressed in business suits were preferred by students, while a white coat and jersey tracksuit were perceived as neutral. Teachers dressed in factory-style work clothes were perceived to be the least preferable, particularly for female teachers (Tamura & Hirabayashi, 2013). Shepherd and Yeon observed that students prefer female and male teachers to wear business casual clothing while teaching. Teachers dressed in business casual attire are most conducive to students' perception of the teacher's competence and approachability, as well as to student learning (Shepherd & Yeon, 2022).

In addition to the fact that different styles of clothing affect people's perceptions of the people with whom they are associated, the McKeachie's study indicates that people's first impression of a woman's personality is influenced by whether she wears lipstick or not, and there is a stereotype of women who wear lipstick (McKeachie, 1952). The Thornton study indicates that wearing glasses influenced people's judgment of the person, often causing the person wearing glasses to be perceived as more intelligent, hardworking, and reliable (Thornton, 1944). Vehicles and signs also affect how people perceive the people they are associated with (Effendi, 2011; Effendi & Whitfield, 2012; Idris, 2011; Idris & Whitfield, 2014; Hashim, 2012; Md Hashim & Whitfield, 2018). Idris and Whitfield (2014) investigated the effects of Corporate Visual Identity (CVI) on personal perception by using the Room-Effect method. The results indicated that the logo and name of the university influenced respondents' perceptions of the university lecturers associated with it. The study presented participants with different logos and names of the university, accompanied by lecturers. The intention was to see if these stimuli changed the way respondents judged the lecturers.

The results of the survey further confirmed that the Room-Effect method can be applied to products. The two makes of motorcycles influenced participants' judgment of their owners, with strong gender and some nationality effects. The motorcycle effect was more pronounced for female models, with the motorcycles having little effect on the perception of the male models. Female models were rated higher when they appeared with the Yamaha than when they appeared with the Modenas. Below table provides a comparative analysis of the specific research methods used in studying the product effect within the domains of vehicle and logo name. What appears to be occurring is that the qualities of the object (room, vehicle, logo name, clothing, glasses, lipsticks) were transferred to the person associated with them. These studies showed the existence of the Room-Product-Effect in these product areas. Studies have been expanded from the effect of the room on people's perceptions, the effect of the home or work office on people's perceptions, to the effect of the product on people's perceptions (Fig. 4).

Researchers	Effendi and Whitfield	Idris and Whitfield	Hashim and Whitfield
Study time	2011, 2012	2011, 2014	2012, 2015
Study areas	Cars	University CVI	Motorcycles
Study method	The Room-Effect, the Five-Factor Model	The Room-Effect, the Times Higher Education (THE) World University Rankings	The Room-Effect, the Five-Factor Model
The survey formats	Online	Online	Online
Stimuli – products	The Mercedes-Benz C-Class car, the Proton Persona car	The traditional university logo, the modern university logo, the actual university name, the fictional university name	The Yamaha motorcycle, the Modenas scooter
Stimuli – people models	Male, female	Male, female	Male, female
Stimuli – people models' countries	Asian, Caucasian	Asian	Asian, Caucasian
Participants number	1053	888	1078
Participant's gender	Male, female	Male, female	Male, female
Main participants' countries	Australia, India, USA	Australia, India, USA	Australia, India, USA
Participant's language	Non-Chinese	Non-Chinese	Non-Chinese
Study tools	Nine-point Likert	Nine-point Likert	Nine-point Likert
Data analysis	Factor Analysis, Univariate ANOVA	Factor Analysis, Univariate ANOVA	Factor Analysis, Univariate ANOVA
The results	Existence of product effects	Existence of product effects	Existence of product effects

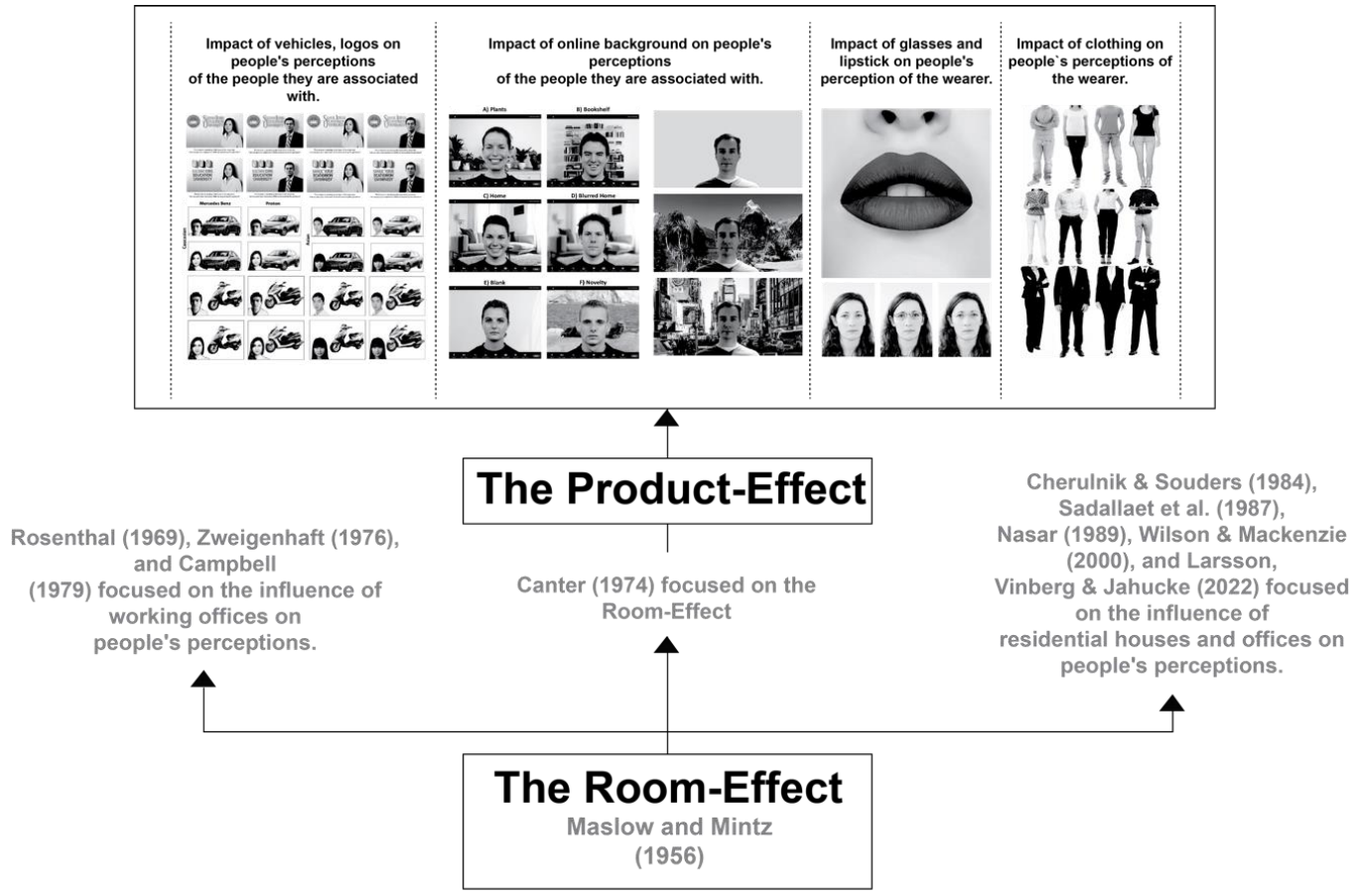

Figure 4. An overview of the previous research from the Room-Effect to the current Product-Effect approach.

METHODOLOGY

Inferential Survey

Participants in the questionnaire will be handed out on an online-based survey. The survey will consist of the female genders of design lecturers with human models as subjects and online background effects as the

stimulus. The stimuli for the research would use the classroom online background setting. Respondents will be asked to evaluate the person (lecturer) with different DVs by answering a 9-Likert scale questionnaire and close-ended questions as instruments from 'Disagree' to 'Agree'. The person is perceived with the academic evaluation based on Times Higher Education (THE) criteria – World Universities Rankings methodology, which consists of four themes: research and citation quality, teaching quality, industry income, and international outlook. The samples of questions will be based on the Five Factor Personality Traits Model (FFM). The subject and stimuli (online background setting) will be altered digitally, and it is intended that the female lecturer should be approximately equivalent in facial expression, age, both moderately attractive, dress code according to proper attire as lecturer, and position similarly. Random sampling used as the survey population consisted of 520 respondents from a total population size of 31,508 students from Malaysian Public Universities (MOHE,2021). The total of respondents in the sample size was taken from the sample size calculator through the Qualtrics XM website. Respondents are from Malaysian Public Universities. The independent variables are the online classroom background setting. Female Lecturer, and Female Lecturer with Hijab as Dependant Variables. Two key visual attributes were identified as prerequisites to the formation of the visual stimuli: 1) Background/physical setting and 2) Human model. The classroom online background effects were selected and incorporated as the online background setting. This selection is based on the most online platforms used for virtual background in Google Classroom, Zoom, Skype, and WebEx application room background settings.

For the human model, a female of Asian race and physical appearance were chosen to fit a Malaysian of Education dress code background, of proper age, and showing a typical lecturer (see figure 5). The selection criteria said that lecturers or academics should wear the smart casual dress (simple colour) with neutral facial expressions and hair colour. Females can achieve a Malaysian or Asian style without wearing any accessories (spectacles) or excessive makeup. The age range was Middle Ages (30 to 40 years old). The lecturers (human models) were carefully chosen by the research team through online sessions for an average level of beauty; an overly attractive model will most likely leave a positive impression regardless of the context (figure 6).

Figure 5. Sample of dress code for female teachers/lecturers in Malaysia

Source: Ministry of Education (Act 1993, Government officer)

Figure 6. The human model selection process of stimuli

Figure 7. Sample of Asian female (free hair edited to hijab) photos for human model selection using Adobe Photoshop software.

Significant effort was devoted to locating Asian human models with similar styles of clothing (both with free hair and covered hair). The reasoning behind this was that models who were either very attractive or very unattractive were not expected to be influenced by a 'Product Effect' as much as those with a more neutral appearance. Consequently, models with a neutral appearance were chosen to reduce biased assessment and participant distraction. A selection of photos featuring an Asian female (hair freely modified to hijab) utilized for human model evaluation through Adobe Photoshop software shown in (Figure 7). According to Thornton (1944) various research indicated that individuals with glasses or piercings were perceived differently compared to those without such features, prompting the exclusion of these variables in this study.

Ethical consent

An official letter of consent to conduct research was sent through the official email of selected fourteen (14) Malaysian Public Universities, in order to get an approval letter or feedback from the institution to conduct this study. Once approved, the research unit or faculty for each university will link directly to the lecturer or group of participants who are interested in getting involved. It took approximately only 30 participants for each group which was equally male and female participants. The online survey will be presented through the Google Form platform with the provided link. Each respondent from each group will be given three sets of questionnaires, consisting of 18 questions. All images were highly visible and a short statement: 'This Male/Female Lecturer conducts his/her online teaching using the Classroom image as Online Background Setting. Can you give your impression of him/her by answering the questions?' was presented underneath the visual stimulus to create a situational context. The context statement intended to explain the relationship between the human model and the online background effect. Overall, it took approximately five minutes to complete a single set of the survey. Only participants between the ages of 18 – and 40 years old invited to participate in this study which consists of Undergraduates and postgraduate studies in Malaysian Public Universities.

Before participants are involved with this online survey, they had been informed prior to participating in this online survey that their consent was required to complete one of the study's ethics requirements and declaration. Participants are free to leave the survey at any time. A consent letter authorised by or on behalf of the JKEUPM (Ethic Committee for Research Involving Human Subjects) in compliance with the National Statement on Ethical Conduct in Human Research was presented to respondents after they were informed of the survey and given the choice to participate or decline. Since participant identities will not be included in the questionnaire, the information will remain anonymous and be utilised only for scholarly research.

Questionnaires

Data were collected via self-completion questionnaires, divided into two sets, with each containing a different set of stimuli (two independent variables: female lecturer and female lecturer with hijab), with 18 questions or dependent variables for each set and four questions regarding respondents' gender, academic, race and university. The 18 questions used a nine-point Likert scale, from 'Disagree' to 'Agree'. Questions

were largely based on the Times Higher Education (THE) – World Universities Rankings methodology, which consists of four themes: research and citation quality, teaching quality, industry income, and international outlook. The content of the questions was distributed evenly amongst these themes, with four questions about each of them. All information used in this analysis was derived from questionnaire data, compiled from questions about different sets of visual stimuli. The following table 2 lists the following questions:

Table 2. Sample of general questions sequenced by EFA

Theme	Code	Question / Item	FFM
Academic Personality	P1	She/He is physically showing good ethic value.	Agreeableness
	P2	She/He has high integrity.	Agreeableness
	P3	She/He shows high professionalism as an academician.	Openness to experiences
	P4	She/He is highly creative.	Openness to experiences
Teaching Quality	TQ1	She/He looks intelligent.	Conscientiousness
	TQ2	She/He dresses appropriately for the online session.	Extraversion
	TQ3	She/He committed to delivering the best teaching experience.	Conscientiousness
	TQ4	She/He is good at motivating students.	Agreeableness
Research & Citation Quality	RC1	She/He has written many scholarly books.	Conscientiousness
	RC2	She/He is a good supervisor for his/her research students.	Agreeableness
	RC3	She/He has received many research grants from government and industrial organizations to support his research.	Extraversion
	RC4	She/He gets high index citations in his/her research papers.	Extraversion
International Outlook	IO1	She/He belongs to a world-class university.	Extraversion
	IO2	She/He has many students from overseas.	Extraversion
	IO3	She/He has participated in many international events.	Extraversion
	IO4	She/He collaborates with overseas universities.	Extraversion
Industry Income	II1	She/He gets income from industry for the universities.	Openness to experiences
	II2	She/He engages with the industry to benefit the universities.	Openness to experiences
Demographic	D1	Gender	-
	D2	Academic Qualification	-
	D3	Race	-
	D4	University	-

An Exploratory Factor Analysis (EFA) was conducted on the 18 questionnaire items. Factor 1 is defined as Higher Education Reputation and Factor 2 is Academic Personality. The academic personality items focused more on personality and teaching quality (dress, professionalism, integrity, ethics, commitment, ethical motivator, intelligence, and creativity) in Table 3.

Table 3. Exploratory Factor Analysis (EFA)

	Component	
	Factor 1	**Factor 2**
have many international student	**.814**	-
participated many international event	**.810**	-
collaborates with many international uni	**.795**	-
get income for industry	**.793**	-
get many research grant	**.789**	-
belong to world class uni	**.786**	-
get high index citation	**.758**	-
engaged with industry	**.743**	-
written many scholars book	**.736**	-
good supervisor	**.668**	-
dress appropriately	-	**.793**
high profesionalism	-	**.788**
high integrity	-	**.764**
ethical	-	**.743**
commited	-	**.713**
good motivater	-	**.665**
look intelligent	-	**.628**
higly creative	-	**.613**

Data Analysis Tools

The SPSS software was utilised to do statistical analysis. 520 samples (N = 520) were analysed with participants from Malaysian public universities (MPUs). The data consisted of 30 respondents from each total overall of fourteen MPUs. This study used multivariate analysis of variance (MANOVA). The primary purpose of the one-way MANOVA is to understand if there is an interaction between the independent variables and the two or more dependent variables. (Bolong, 2022). This study is to identify if there is an effect of classroom online background setting (IV 1) by the gender effect on the two aspects of perceptions of MPUs design lecturers during online teaching, which is a female lecturer (DV1) and female lecturer with hijab (DV2) as per visual in Conceptual Framework (Figure 8).

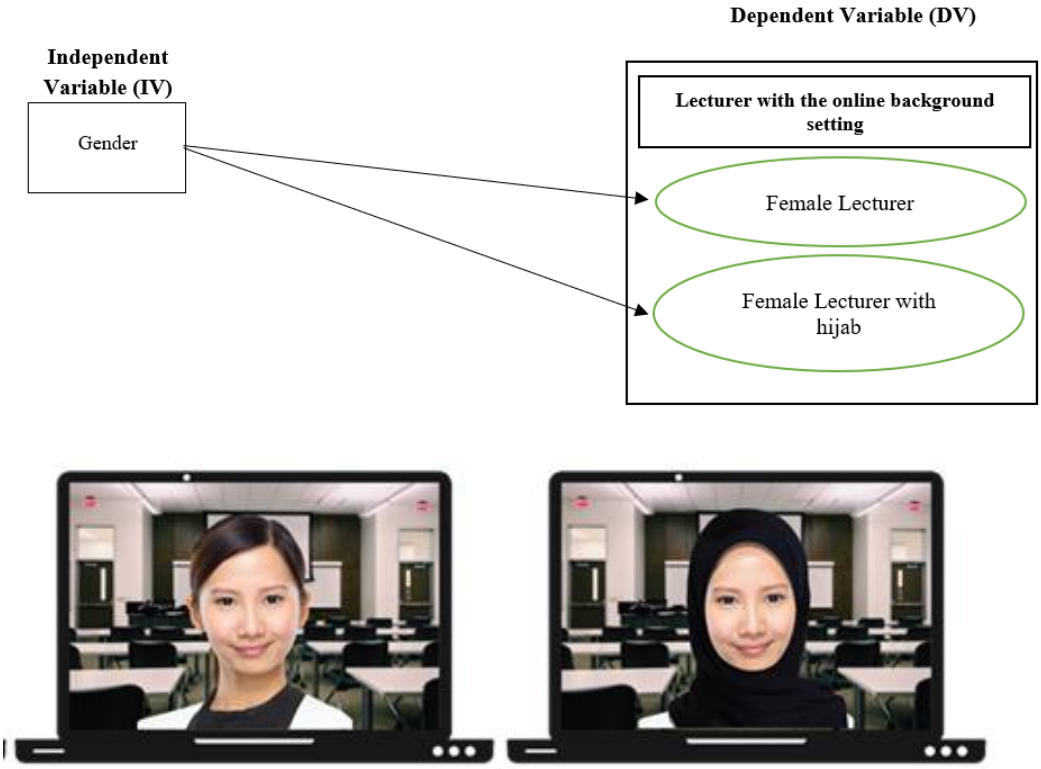

Figure 8. Conceptual Framework and Samples of Stimuli

Hypothesis:

Ho: Gender is **not the factor** among the two academicians with online background settings between female lecturers and female lecturers with hijabs in Malaysian Public Universities during online teaching.

Ha: Gender is **the factor** among the two academicians with online background settings between female lecturers and female lecturers with hijabs in Malaysian Public Universities during online teaching.

ANALYSIS & RESULTS

The factor of gender towards Female lecturers, and Female Lecturers with hijabs in Malaysian Public Universities during online teaching.

Overall, the result of the Multivariate Pillai's Trace test (Table 4) showed that **there was a significant effect of gender** on the dependent variables [$F(2,7.654, p<0.05)$]. Based on the analysis result, the null hypothesis was rejected, and the researcher reported that generally, gender is the factor towards the female lecturers, and Female Lecturers with hijabs in Malaysian Public Universities during online teaching.

Table 4: Multivariate Pillai's Trace Tests (b) for Effects of Gender towards MPU lecturer with online background setting

Effect		Value	F	Hypothesis df	Error df	Sig.(p)
Intercept	Pillai's Trace	.969	7964.737[b]	2.000	513.000	.000
Gender	Pillai's Trace	.029	7.654[b]	2.000	513.000	.001

a. Design: Intercept + Gender
b. Exact statistic

MANOVA test analysis (Table 5) was done on dependent variables, which also generally showed a significant difference between both categories of gender in terms of all **MPU lecturers with online**

background settings. This result indicated that the gender of the students in this study influenced their perceptions of **MPU lecturers in the online background setting.** Overall, the tests of between-subjects effects (Table 5) showed that both female lecturers significantly had gender effect .002 [p<0.05]. Also, female lecturers with hijab had gender effect with very strong evidence against the null hypothesis .000 [p<0.05].

Table 5: Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Female Lecturer	1029.362[a]	1	1029.362	9.863	.002
	Female Lecturer w Hijab	1540.681[b]	1	1540.681	13.997	.000
Gender	Female Lecturer	1029.362	1	1029.362	9.863	.002
	Female Lecturer w Hijab	1540.681	1	1540.681	13.997	.000
Total	Female Lecturer	1743264.000	516			
	Female Lecturer w Hijab	1711200.000	516			
Corrected Total	Female Lecturer	54674.225	515			
	Female Lecturer w Hijab	58117.760	515			

a. R Squared = .019 (Adjusted R Squared = .017)
b. R Squared = .027 (Adjusted R Squared = .025)

The gender aspect accounted for just 1.9% of female lecturers with an online background setting and only 2.7% of female lecturers wearing hijab among MPU design educators during online instruction (Table 5). Referring to the average values presented in (Table 6) for each dependent variable among Malaysian Public Universities, it was observed that institutions in this study had a more favourable perception of female lecturers with an online background led by UKM (mean score = 134), while the university with the lowest score was UM (mean score = 111). Nevertheless, according to the descriptive statistics for MPUs lecturers with an online background at universities, female lecturers in hijab at USIM have a higher score (mean score = 159) compared to female lecturers without hijab, with UM recording the lowest score (mean score = 110).

Table 6: Descriptive Statistics for MPUs lecturer with online background setting between university

	University	Mean	Std. Deviation	N	Sig.
Female Lecturer	UIAM	130.7333	20.71137	30	.002
	133.5152	14.19974	33		
	UM	110.5484	24.79629	31	
	UMK	122.2121	27.96958	33	
	UNIMAS	127.5333	21.92893	30	
	UPSI	120.1818	22.08680	44	
	UPM	128.7568	23.39682	37	
	USIM	130.0000	18.93245	33	
	USM	116.0333	23.77986	30	
	UNISZA	124.0000	18.30665	31	
	UTM	120.5484	23.46322	31	
	UiTM	125.5422	25.52631	83	
	UTHM	131.2121	17.34351	33	
	UUM	132.0000	27.51454	41	
	125.3462	23.38213	520		

Female Lecturer w hijab	UIAM	150.6333	22.42302	30	.000
	133.5152	14.19974	33		
	UM	109.0968	24.07953	31	
	UMK	122.2121	27.96958	33	
	UNIMAS	126.0333	22.29966	30	
	UPSI	120.0227	22.21616	44	
	UPM	127.5405	23.74938	37	
	USIM	158.8182	13.53573	33	
	USM	116.0333	23.77986	30	
	UNISZA	158.4194	10.89579	31	
	UTM	120.5484	23.46322	31	
	UiTM	125.3976	25.64340	83	
	UTHM	131.2121	17.34351	33	
	UUM	132.0000	27.51454	41	
	130.0788	26.05810	520		

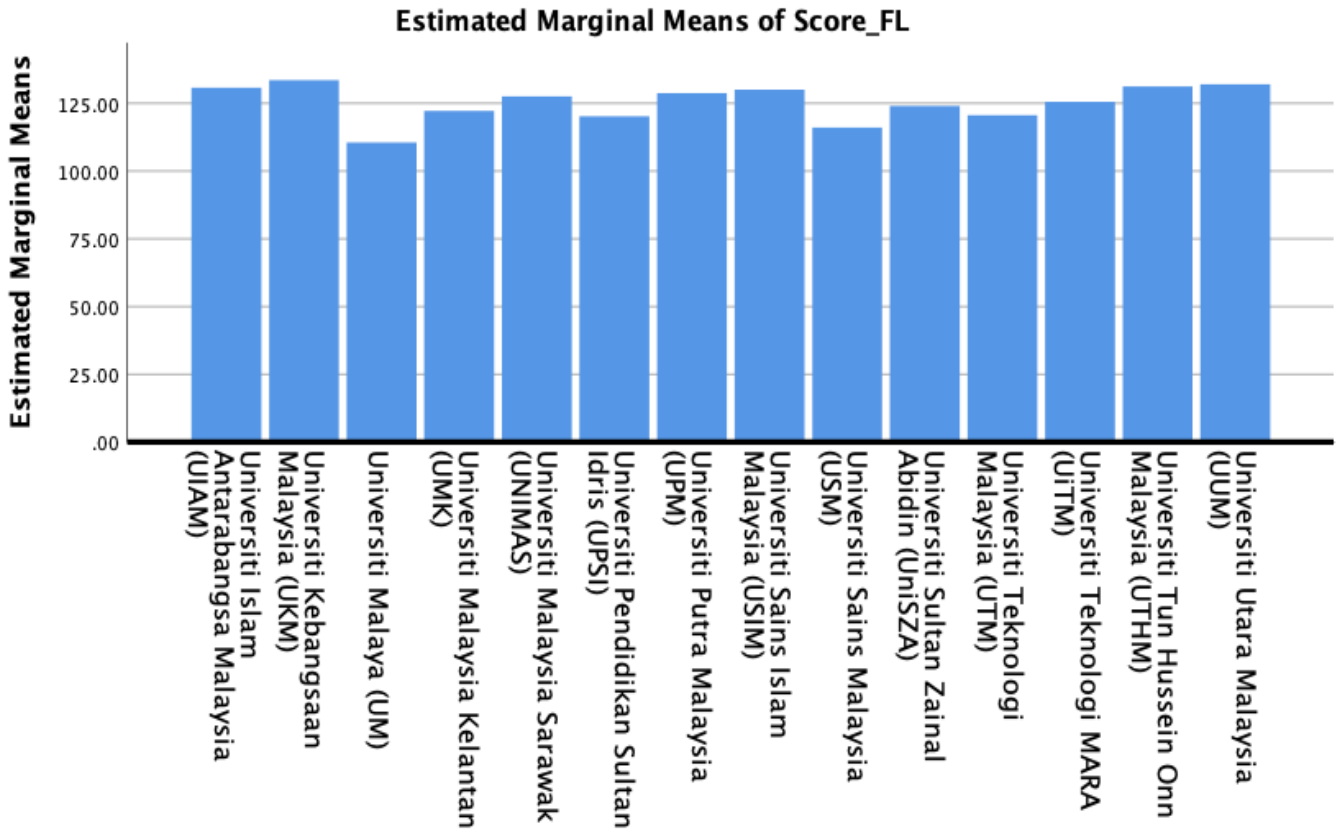

Figure 9. Bar Chart score between Malaysian Public Universities for non-hijab Female Lecturer

According to the following bar chart, it was observed that the Malaysian higher institutions in this study had a more favourable perception of female lecturers with an online background led by UKM (mean score = 134), while the university with the lowest score was UM (mean score = 111). Second higher score was UUM (mean score = 132), followed by UTHM (mean score = 131), USIM (mean score = 130), UIAM (mean score = 130), UPM (mean score = 128), UNIMAS (mean score = 127), UITM (mean score = 125), UNISZA (mean score = 124), UMK (mean score = 122), UPSI (mean score = 120), UTM (mean score = 120), and the second lower score was USM for female lecturer non hijab (mean score = 116).

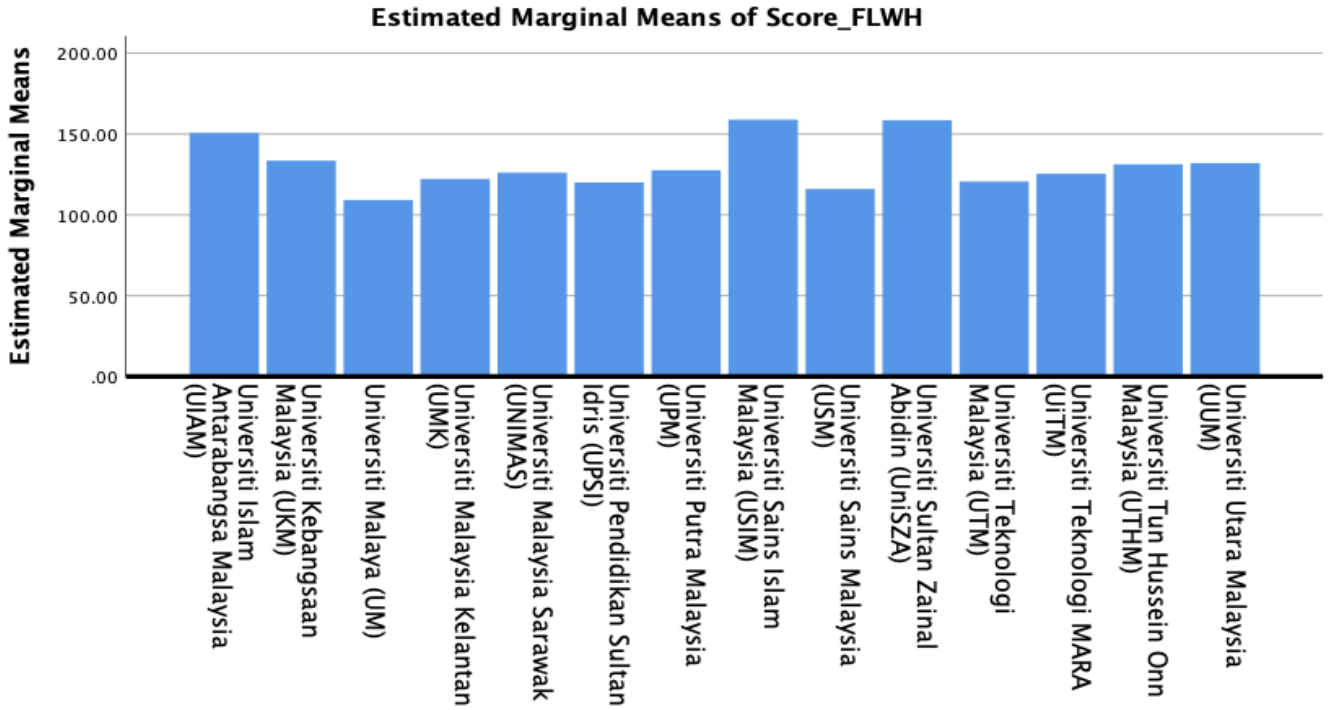

Figure 10. Bar Chart score between Malaysian Public Universities for Hijab Female Lecturer

The above bar chart it was shown that that the Malaysian higher institutions in this study had a more favourable perception of female lecturers with an online background led by USIM (mean score = 159), while the university with the lowest score was remain UM (mean score = 111). Second higher score was UNISZA (mean score = 158), followed by UIAM (mean score = 150), UKM (mean score = 133), UUM (mean score = 132), UTHM (mean score = 131), UPM (mean score = 127), UNIMAS (mean score = 126), UiTM (mean score = 125), UMK (mean score = 122), UTM (mean score = 120), UPSI (mean score = 120), USM (mean score = 116). As fact, it shown that the higher score from respondents voting for Hijab Female Lecturer comes from majority Muslim state or Islamic universities such as UNISZA, USIM and UIAM.

DISCUSSION

The findings of this research revealed that a greater number of students from predominantly Islamic or Muslim regions, like UNISZA in Terengganu (situated on the East Coast of Malaysia), hold stronger views regarding female lecturers wearing hijab during online classes than respondents from urban areas around Klang Valley and Kuala Lumpur. This research might also benefit Malaysian public university design students by evaluating how MPU design instructors with online experience are viewed during the online teaching and learning process. As a result, it is recommended to increase the number of male and female lecturers who wear hijabs and have diverse online backgrounds. Furthermore, this research could help educators or the related service industry alter perceptions of female instructors in Malaysian public universities during online teaching. The findings showed that since more than 90% of the variations in the dependent variable were not recognized by other studies or the researcher utilized different profile factors to assess their effect on design students in Malaysian public schools, further research is needed in the future to investigate additional factors affecting these three dependent variables. This study aims to add fresh insights to the field of education or environmental psychology. This study for the higher education institution relies on an examination of current learning environment approaches within the higher education sector. It offers a practical implementation regarding virtual learning environments for product perception influenced by the "Room Effect," which is an innovation in online education. Consequently, Malaysians in Higher Education might benefit from this study by enhancing the perception of academic professionalism for future online teaching and learning. Additionally, it will help change scholars' perspectives on the role of this research area, enabling them to recognize how research within a learning context can provide insights into addressing

audiences' emotional needs during online and learning experiences. The study further contributes to the field of environmental psychology, specifically examining academic perception to assess it on this digital platform. Ultimately, besides grasping students' perceptions of their teachers, researchers might also apply this approach to other aspects associated with human self-esteem.

CONCLUSION

In conclusion, the research hopefully will enhance the educational platform by utilizing a virtual learning environment to align with the Malaysian Education Blueprint 2015-2025 for Higher Education (HE). It will also improve lecturer professionalism in online teaching and learning to attain quality education via SDGs. Enhance the educational experience to foster cognitive, emotional, and social learning for students via a virtual learning setting in the context of the 4th Industrial Revolution in Education. Possible analyses conducted on these results will aid in creating a new appropriate guideline or framework for online teaching and learning environments, aimed at enhancing the cognitive, emotional, and social development of students in Malaysia's Higher Education. The existing approach to product impact can be broadened to include the Virtual Room Effect within the realm of online environmental psychology. The importance of this research will enhance the Room Effect Method, facilitating the development of new normal online setting guidelines and readiness amid any crisis in Malaysian Higher Education. These research findings illustrate the impact of the product and further the field of social psychology. On a more pragmatic level, they offer a means for evaluating the possible influence a product could exert on the perception of the individual linked to it. This might be advantageous in the areas of design and marketing. The research prompts the inquiry of whether this impact extends to other products and areas. The present research is exploring its use in jewellery, Chinese women's clothing, and packaging. The future application of this method could also be extended to include testing on various nationalities, multiracial groups, or age ranges.

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