Article

Exploring Egyptian Consumers' Drive for Sustainable Purchases through Financial Empowerment and Environmental Awareness: The Moderating Role of Demographic Characteristics

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ABSTRACT

In emerging countries, there has been a progressive growth in green purchasing intentions. This is because of regulations and the increasing environmental consciousness of younger generations. In addition, emerging countries are not economically stable, which affects income level, prices and currency purchasing power. Consequently, drawing on the theory of green purchase behaviour, this study investigates the relationship between environmental knowledge, financial self-efficacy and financial wellbeing and their impact on green purchasing intentions. Additionally, it explores the moderating role of age, education level and gender. 680 questionnaires were analysed using PLS-SEM. The findings indicated that individuals' belief in their ability to manage their finances, their perception of their financial well-being and their understanding of environmental issues positively influence green purchase intention. In addition, results indicated that only age can significantly moderate these direct relations. The results will help managers promote green purchase intention, especially that customers in emerging economies are more sensitive to their financial position and generally focus less on environmental issues which affect their green purchase behaviour. Shedding light on this issue will help companies boost their competitiveness. The results will also help extend the theory through conceptualising its abstract ideas by the research variables and test the relations in an emerging market.

KEYWORDS: sustainability; green purchasing intention; environmental knowledge; financial self-efficiency; financial wellbeing; structure equation modeling

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ABBREVIATIONS

TGPB, theory of green purchase behaviour; GPI, green purchase intention; FSE, financial self-efficacy; SFW, subjective financial wellbeing; EK, environmental knowledge

INTRODUCTION

During the last decade, environmental phenomena, such as climate change, global warming and poor level of life quality, have driven communities and business sectors to reformulate their strategies and practices to achieve sustainability goals [1–3]. These strategies and practises result in the development of products, services and activities that are more environmentally sustainable [4]. This cannot be achieved without the involvement and collaboration between all stakeholders and interested parties [5–7]. Each stakeholder has a role, starting with suppliers that provide sustainable materials, producers that manufactures the green products using sustainable operations with less environmental impacts and resources till distributors and logistics providers that have a significant role to support their environment friendly practices in terms of waste management and carbon footprint minimisation [8–10]. This concept is extended to the consumers [11,12] through marketing campaigns, training and educational programs and sustainable packaging with adequate information for disposition as they are shifting their purchasing attention to be sustainable products [13]. In additon, they are probably more willing to purchase products featured as eco-friendly rather than traditional products in order to support their communities to be more sustainable and minimise their exposure to environmental risks [14,15].

One of the main aspects that drive customers to green purchase intention is environmental knowledge, which is considered the perception of individuals based on their knowledge [16]. Since attitudes are connected to knowing the circumstances of one's actions [17], it can be argued that environmental knowledge can push customers towards environmental friendly products as it changes their mind set towards environmentally responsible practices [18,19]. This is aligned with the theory of green purchase behaviour (TGPB): environmental knowledge can result in a higher perception of quality and satisfaction with environmentally friendly products, which in turn can strengthen the intention to make green purchases [20]. This implies that increasing awareness and understanding of green products will highlight their advantages and lead to a higher demand for such products [21]. TGPB focuses on the extent to which individual are willing to purchase environmentally friendly products [20]. Moreover, some researchers investigated the role of financial inclusion and the availability of financial services on consumers' capacity to make sustainable purchase decisions [22,23]. This is supported through the relationship between TGPB and individual financial situations

as they have a crucial role in influencing customers' attitudes, intentions and actual behaviour towards green products. Gaining insight into this relationship can encourage the adoption of sustainable consumption behaviours and lead to purchase intention [24]. Regarding the demographic characteristics, the researchers have investigated how the customers' intention decision could be different based on the individual's age, gender and educational level. Regarding age, they examined if there are differences in sustainable purchase behaviour among different age groups [25]. For gender, they investigated the potential impact of gender on individuals' intentions to engage in sustainable purchasing [26]. Regarding educational level, they examined the influence of education on consumers' understanding of environmental matters and their inclination to adopt sustainable behaviours [27]. Consequently, the research problem can be raised as follows: "understanding the impact of financial empowerment and environmental knowledge on the sustainable purchasing behaviour of Egyptian consumers with specific demographic characteristics".

Based on the above discussion and drawing on the theory of green purchase behaviour, this paper fulfils an identified need to study which factors can affect sustainable purchasing intention, answering the following research questions: (1) What is the impact of Financial Empowerment and Environmental Awareness on sustainable purchasing intention for the Egyptian consumers? (2) Do gender, age and educational level of Egyptian consumers affect the relation of Financial Empowerment and Environmental Awareness on sustainable purchasing intention? Several studies have shown empirical data that confirm the presence of a sequential relationship between attitude and behaviour, where behaviour is observed to be influenced by an individual's attitude [28,29]. There is a general agreement that people's attitudes towards a certain behaviour can be used to predict their personal intention [30,31]. The act toward a specific situation comes from various variables that could affect individual intention, such as environmental knowledge and sociodemographic characteristics (educational level, gender and age). For instance, young consumers, in particular females who will make the decisions in the future, are thought to be more ecologically conscious than older generations, according to Kowalska-Pyzalska, Kott [32] and Zhuang, Luo [33]. These variables are examined, and substantial research has been conducted to determine the mediating and moderating factors affecting green purchase intentions [34]. However, the importance and impact of sociodemographic variables and education level can differ in developing countries that could influence consumer behaviour due to the recent concern with the expansion for sustainability practices and the gender equality in all opportunities compared to the past decades [13,35,36]. This is particularly important in the Egyptian market as Egypt is considered to be one of the main contributors to the green gas house emissions in Africa [37,38]. However, Egypt has made progress toward its vision 2030 goals by

implementing green and sustainable strategies [39,40], using renewable and green energy sources, mitigating of plastic products and using recyclable packaging and producing environment-friendly products to mitigate the pollution and increase the resource conservation [41,42]. In addition, the government raises the level of environmental awareness and knowledge in schools and colleges for young generations. This was clear during hosting COP27. The majority of enterprises showed their strategies in line with the sustainability vision; besides, global funds were offered by international institutes and developed countries to encourage the transition to the green era [43,44].

Unfortunately, the economic situation in terms of high percentage of inflation, currency depreciation and recession enforces the consumers to prioritise their needs and intentions. In other terms, the consumers will restructure their financial self-efficacy, which is the ability to plan and carry out actions that result in the accomplishment of specific goals [45]. This situation has been further complicated due to global disruption in terms of COVID-19 and Russia and Ukraine war [46], especially that they affected individuals' ability to maintain desired living standards and financial freedom, which is known as financial wellbeing [47]. However, the age and educational level can affect the consumers' decision regarding their purchasing intention. The consumers critically think of the dilemma of protecting the environment and keeping their financial situation stable. In line with this, the producers seek to provide the customers with green and sustainable products with reasonable prices and high quality, which satisfy their needs. Although previous studies sought to understand what influences green purchase intention (e.g., Han [20]; Khoja, Adams [48]; Zameer, Wang [49]), there is a lack of studies that focus on consumers' optimistic expectations for their own financial situations and the influence of those expectations [50], while taking into consideration the role of gender, age and educational level, particularly in developing countries, especially that previous studies focused on green purchase intention in developed economies (e.g., Zameer, Wang [49]) and environmental knowledge (e.g., Chanda, Isa [51]; Elbarky, Elgamal [19]), in addition, studies that focused on a developing economy (Egypt) (e.g., Elbarky, Elgamal [19]) did not include a financial perspective.

The remainder of the paper is structured as follows: literature review and hypotheses development will be presented. Then, the research methodology will be demonstrated, which includes data collection and analysis and the results. Finally, discussion and conclusion will be presented, which includes discussion of the results in light of previous studies' findings, theoretical and practical implications, and limitations and suggestions for future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Financial Self-Efficacy and the Consumer's Green Purchase Intention (GPI)

Recently, green purchase intention has been used as a predictor of green product sales and repeated purchases of existing products, as it focuses on consumers' desire to buy and pay for environmentally friendly goods [52], which makes it a leading indicator of green purchase behaviour [14]. Since green products' price is higher than that of other products [53], it can be argued that consumers will restructure their financial self-efficacy, as people consider themselves with good financial self-efficacy when they feel less financially stressed and can manage and control their financial situation efficiently [54]. In general, financial self-efficacy is the ability to plan and carry out actions that result in the accomplishment of specific goals [45]. Self-efficacy has a great impact on the individual's decision and behaviour [55]. Self-efficacy may be raised (or lowered) as a result of the behaviour and the associated experience of success (or failure). Furthermore, people with high financial self-efficacy see opportunities instead of threats, including potentially beneficial options [56]. Moreover, confidence to manage the financial situations for people who own a high financial self-efficacy will bring them a great value. Green products could generate a great value to the buyer and give people a good reputation and self-comfort that will have a great intention to buy [57].

Many researchers have considered self-efficacy from the financial perspective and its impact on the continuance intentions [58,59]. Self-efficacy has been studied from different perspectives in the literature. Sivaramakrishnan, Srivastava [60] measured how financial self-efficacy could affect the level of an individual's conviction on the extent to which the utilisation of a specific system would alter their cognitive processes. Liu, Yang [61] indicated that cognitive processes could change the individual behaviour and intention. Consequently, it could be argued that financial self-efficacy could have an impact on the individual intention. Some studies used self-efficacy as a mediating variable, and it was one of the predictors of these relations, like Shiau, Yuan [62]. It is obvious from the previous discussion that there is potential in investigating the impact of financial self-efficacy on green purchasing intention. Therefore, the following hypothesis is proposed:

H_1: Financial self-efficacy positively affects the consumer's green purchase intention.

Financial Wellbeing and Green Purchase Intention

Perceptions of the ability to maintain desired living standards and financial freedom at present and in the future is known as financial wellbeing [47]. Financial wellbeing is also described as meeting the person's current needs and future financial duties; it can help people make

decisions that allow them to enjoy life and feel confident about their financial future situation [46,63,64]. The authors added that scholars have considered the definition of financial wellbeing as the individual's assessment of their current financial situation. A number of researchers have measured the impact of financial wellbeing on intention; Brüggen, Hogreve [46] measured the impact of financial wellbeing on intentions, and the results show that financial wellbeing has a positive impact on intention. Based on the fact that there can be a positive relationship between the personal financial wellbeing and buying more green products [65], especially that green products are more expensive than other products [53], the following hypothesis is proposed:

H_2: Financial wellbeing positively affects the consumer's purchase intention.

Environmental Knowledge and Green Purchase Intention

Environmental knowledge can be defined as the general information, ideas, perceptions, impressions and relationships related to the environment [9,66]. Environmental knowledge could increase any person's thoughts about the problems, changes and issues related to natural environment [67]. Increasing the person's environmental knowledge related to problems and issues has been recognised as a vital indicator to environmental-friendly behaviours [68,69]. Eid, Salah [67] stated that behaviour is one of the indicators that contribute to the intention processes. Ali, El Rouby [29] confirmed that the attitudes toward the environment will be positively impacted by having an actual understanding of the environment, and the attitudes toward using environmentally friendly products will be influenced by environmental knowledge.

Understanding environmental issues is essential for interpreting attitudes, intentions, and behaviours toward the environment. Therefore, previous studies have indicated the role of environmental knowledge to the green purchase intention. Qi, Yu [70] found a positive significance between environmental knowledge and green purchase intention. Ali, El Rouby [29] examined the relationship between environmental knowledge and green purchase intention. This falls in line with the study of Machová, Ambrus [36] which concluded that environmental information on the product package and the level of education play a very important role in influencing individuals to buy environmentally friendly products. The findings indicated that the environmental knowledge and green purchase intention are highly correlated. Based on the above discussion the following hypothesis is developed:

H_3: Environmental knowledge positively affects people's green purchase intention.

Sociodemographic Variables (Educational Level, Gender and Age) and Green Purchase Intention

Sociodemographic characteristics appear to be another significant aspect that can affect customer purchasing intention for green products [71,72]. Items such as age, gender, education level, number of children, area of residence or financial condition were used in the speciality literature to indicate this dimension [73,74]. Some resaerchers investigated the role of consumer demographics feasutes, such as education level, gender [75] and income level [76] and their inpact on GPI.

Recently, the impact of gender on the purchase of environmentally friendly products is examined by Witek and Kuzniar [77]. The study revealed that women are more environmentally conscious than men, as they care more about their health and safety. In addition, they are more willing to pay more for environmentally friendly products. In terms of age, the findings by Witek and Kuzniar [77] and Ham, Chung [73] demonstrate that elderly people tend to buy environmentally friendly items; in addition, compared to younger individuals, elderly people appear to be more responsible in addressing environmental issues through activities. When it comes to the influence of education on purchasing green products, previous studies revealed that educational level can positively influence customers' intentions (e.g., Sidique, Lupi [78]; Tan, Sadiq [74]) indicate the reverse.

Since educational level [19,67], age and gender [19,79] can influence environmental knowledge and financial position and stability, it can be argued that the relationship between environmental knowledge, financial self-efficacy and subjective financial wellbeing on one hand and green purchase intention on the other hand can be moderated by educational level, gender and age. Thus, the following hypotheses are developed:

H_4: Educational level moderates the direct impact of financial self-efficacy, financial wellbeing and environmental knowledge on green purchase intention.

H_5: Gender moderates the direct impact of financial self-efficacy, financial wellbeing and environmental knowledge on green purchase intention.

H_6: Age moderates the direct impact of financial self-efficacy, financial wellbeing and environmental knowledge on green purchase intention.

The proposed study framework is shown in Figure 1.

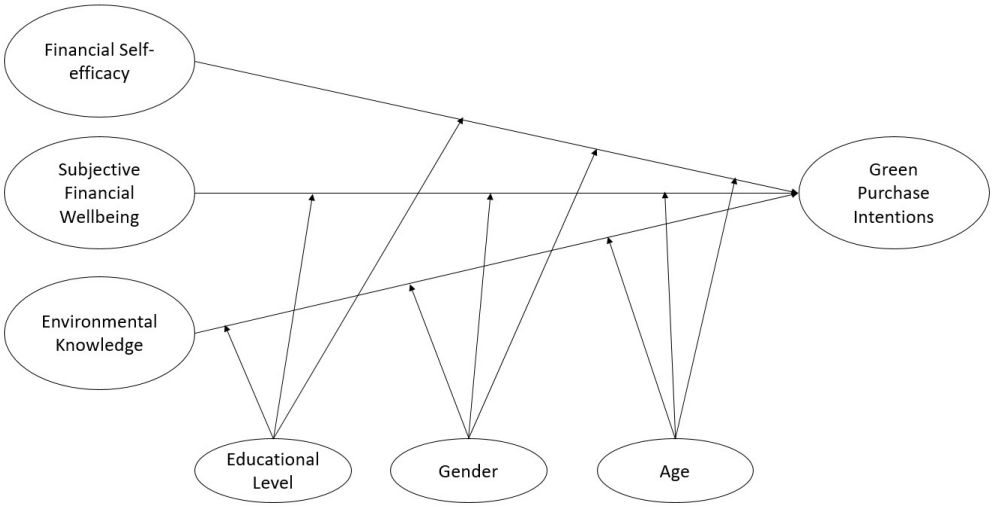

Figure 1. Research variables and framework.

RESEARCH METHODOLOGY

Data Collection

Participants were mainly individuals living in three governorates: Cairo, Giza and Alexandria. These three urban governorates are considered the most populated in Egypt [80]. A quantitative approach is adopted in this research through using questionnaires in order to collect the research data. Quantitative methodologies enable researchers to get accurate and unbiased data, especially that this study gathered data about gender, age and education level; in addition, as the quantitative research relies on numerical data and extracts precise measurement, it facilitates the identification of statistical associations among variables [81]. Moreover, the research sample was suitable to conduct a questionnaire to enhance the generalisability of findings, examine causation, undertake group comparisons and carry out longitudinal investigations [82].

Items in the questionnaire were adapted from previous studies, as shown in Table 1. The items were originally in English, and a back translation process was carried out to distribute the questionnaire in Arabic. Data collection was carried out using snowball technique in the pilot and the main study. The mechanism of collecting data started with asking a number of participants to fill the questionnaires. Out of the individuals that responded, some were asked to recommend a number of other participants. However, in most cases, not all recommenders responded. Non-response bias, which is illustrated in the following section, was calculated through adding the number of individuals that were contacted to fill the questionnaire and the total number of individuals that actually filled the questionnaire.

A group of experts was consulted (3 practitioners and 3 academics) to ensure face and content validity, in addition to translation accuracy in the pre-test. Then, a pilot study was carried out through distributing 172

questionnaires, of which only 142 were valid, completed and collected. This means that the response rate was 82.56%. These 142 questionnaires were analysed to ensure construct validity and reliability, using factor loadings and Cronbach's alpha, which was calculated using SPSS. Table 1 shows factor loading and Cronbach's alpha for all items and constructs, which illustrates that validity and reliability requirements were met. The questionnaire was distributed (pilot and main study) to individuals with age of 30 and above, as most probably they have a bank account and stable cash flow to some extent through a decent job, which will allow them to answer the questionnaire accurately.

Table 1. Reliability and validity for the pilot study.

Construct	Source	Items		Sample Size (*N*)	Factor Loading	Cronbach's alpha
Financial self-efficacy	[83]	I am confident that I can manage my finances.	FSE1	142	0.757	0.843
		I can easily spend less than my income each month.	FSE2		0.861	
		I can confidently deposit money in the bank to plan for the future.	FSE3		0.710	
		I have the ability to borrow money from the bank.	FSE4		0.774	
		I have what it takes to use financial services to manage my financial goals.	FSE5		0.849	
Subjective financial wellbeing	[79]	How frequently do you find yourself just getting by financially and living from payslip to payslip?	SFW1	142	0.817	0.942
		How often do you worry about being able to meet normal monthly living expenses?	SFW2		0.863	
		How do you feel about your current financial situation?	SFW3		0.875	
		How satisfied are you with your present financial situation?	SFW4		0.918	
		What do you feel is the level of your financial stress today?	SFW5		0.910	
		How confident are you that you could find the money to pay for a financial emergency that costs about twice your weekly income?	SFW6		0.916	

Table 1. *Cont*.

Construct	Source	Items		Sample Size (*N*)	Factor Loading	Cronbach's alpha
Environmental knowledge	[68]	I know that I buy products and packages that are environmentally safe.	EK1	142	0.859	0.900
		I know more about recycling than the average person.	EK2		0.803	
		I know how to select products and packages that reduce the amount of waste ending up in landfills.	EK3		0.742	
		I understand the environmental phrases and symbols on product packages.	EK4		0.905	
		I am confident that I know how to sort my recyclables properly.	EK5		0.786	
		I am very knowledgeable about environmental issues.	EK6		0.817	
GPI	[34]	Due to its environmental concerns, I will try to purchase the green product.	GPI1	142	0.903	0.945
		I plan to purchase this product because of its eco-friendly performance.	GPI2		0.921	
		I intend to purchase this product because of its environmental performance.	GPI3		0.866	
		I am happy to purchase these products because of their eco-friendliness.	GPI4		0.856	
		I will collect and comprehend information about eco-friendly products.	GPI5		0.858	
		I will purchase eco-friendly products when I need to buy a green product.	GPI6		0.915	

Note: FSE = Financial self-efficacy; SFW = Subjective financial wellbeing; EK = Environmental knowledge; GPI = Green purchase intentions.

Non-Response Bias and Common Method Bias

According to Zahl-Thanem, Burton [84], non-response bias is employed as a means to mitigate any disparities between early and late responses. The findings from Levene's analysis indicate that the *P*-value is not statistically significant, suggesting that there is no meaningful difference between early and late responses. To account for common method bias, the loading of each item will be determined to guarantee that none of the items account for 50% or more of the total variation [85]. The results of the common method bias analysis conducted on Harmon's one-factor test revealed the absence of common method bias.

Data Analysis

The validity and reliability of the questionnaire items were calculated. Regarding reliability, Cronbach's alpha and composite reliability exceeded the cut-off point of 0.7 [34]. In addition, factor loadings and AVE are above 0.5 (see Table 2) and HTMT values are below 0.8 [86] (see Table 3). The hypotheses testing and validity and reliability were calculated using SMART-PLS as PLS-SEM. Partial least square structural equation modelling was adopted to test the relationships among the research variables as it allows for a simultaneous testing [87] of the impact of environmental knowledge, financial self-efficacy and financial wellbeing on green purchase intention, while taking into consideration the moderating role of age, education level and gender, which helps in achieving the research aim. More specifically, partial least square was adapted to fit the complex research model [88] as it contains more than 5 variables [89] and combines multiple moderation variables [90]. Following Akhtar, Li [91] the bootstrapping technique was used to assess model adequacy, through calculating the SRMR and NFI model fit indices, in addition, R^2 and R^2 adjusted were also illustrated to support the goodness fit of the model. The output illustrated the value of 0.058 for SRMR and the value of 0.841 for NFI, which indicate an acceptable model fit. In addition, R^2 and R^2 adjusted recorded a value of 0.611 and 0.601 respectively, which also indicate a good model fit [92].

Table 2. Reliability and validity for the main study.

Construct	Factor Loading	Sample Size (*N*)	Cronbach's alpha	Composite reliability	AVE
Financial self-efficacy	0.814	611	0.876	0.889	0.671
	0.880				
	0.704				
	0.821				
	0.866				

Table 2. *Cont*.

Construct	Factor Loading	Sample Size (*N*)	Cronbach's alpha	Composite reliability	AVE
Subjective financial wellbeing	0.711	611	0.898	0.915	0.662
	0.826				
	0.767				
	0.823				
	0.884				
	0.859				
Environmental knowledge	0.853	611	0.897	0.899	0.661
	0.812				
	0.740				
	0.887				
	0.753				
	0.824				
GPI	0.886	611	0.916	0.922	0.704
	0.831				
	0.858				
	0.784				
	0.787				
	0.881				

Table 3. Discriminant validity HTMT.

Research variables	Environmental knowledge	Financial self-efficacy	Green purchase intention
Financial self-efficacy	0.395	-	-
Green purchase intention	0.568	0.417	-
Subjective financial wellbeing	0.570	0.295	0.754

RESULTS

Table 4 illustrates sample characteristics of the 611 individuals who participated in the main study. Originally, 680 questionnaires were distributed, and 660 were collected, with 49 incompletes, which means the response rate is 89.85%.

Table 4. Sample characteristics.

Demographics	Category	Frequency	Percentage
City	Cairo	236	38.6
	Alexandria	203	33.2
	Giza	172	28.2
Gender	Male	268	43.9
	Female	343	56.1
Education Level	Bachelor's degree	196	32.1
	Bachelor's degree & professional diploma	220	36.0
	MSc	133	21.8
	PhD	62	10.1
Age	30–40	191	31.3
	41–50	173	28.3
	51–60	235	38.5
	>60	12	2.0

Regarding the education level, Egypt has four main categories, which are (Bachelor's degree, Bachelor's degree & professional diploma, MSc and PhD). It could be observed that the PhD holders are only 62; however, it can be proved that the number of PhD holders in Egypt decreases from 128,689 in 2015 to 11,255 in 2022 [93]. Therefore, it can be argued that the number of PhD holders is low as it represents the actual low percentage of PhD holders in the Egyptian community.

The data indicate that a significant portion of the sample—more than 70%—comes from large cities, with Cairo and Alexandria accounting for 38.6% and 33.2% of the sample, respectively. Giza (28.2%) is not far behind. The greater population density in major urban areas is reflected in this distribution.

Based on the results illustrated in Figure 2, it can be argued that financial self-efficacy positively influences green purchase intention as (ß = 0.190, *p*-value is 0.000); this mean that when a customer feels competent and self-assured in managing their finances, they are more inclined to make purchasing decisions that are both environmentally friendly and eco-friendly. This means that the first hypothesis is supported, and this agrees with Sh. Ahmad, Rosli [94]. As for $H_{2,}$ subjective financial wellbeing positively influences the green purchase intention as (ß = 0.457, *p*-value is 0.000) is supported. This means that customers who experience positive subjective financial situation are more likely to opt for green products, and this is compatible with Yıldız and Erciş [95]. For the third hypothesis, it can be shown that environmental knowledge can positively influence green

purchase intention as (ß = 0.153, *p*-value is 0.037). This means that customers with a strong comprehension of environmental issues and awareness are more likely to select green and eco-friendly products. This means that H_3 is supported, and this result is in line with Putra [96]. It is also important to mention that R^2 adjusted for the dependent variable is 60.1 %, which means that about 60.1% of the variation in the dependent variable is accounted for by the independent variables within the research model. This reflects the extent to which the model accurately represents the data and fit. It can be concluded that financial self-efficacy, subjective financial wellbeing and environmental knowledge have a positive influence on consumers' intentions to make green purchases. Individuals who exhibit a strong sense of financial competence and regard themselves as financially prosperous and demonstrate a high level of environmental consciousness are more intended to make sustainable and environmentally friendly purchasing decisions.

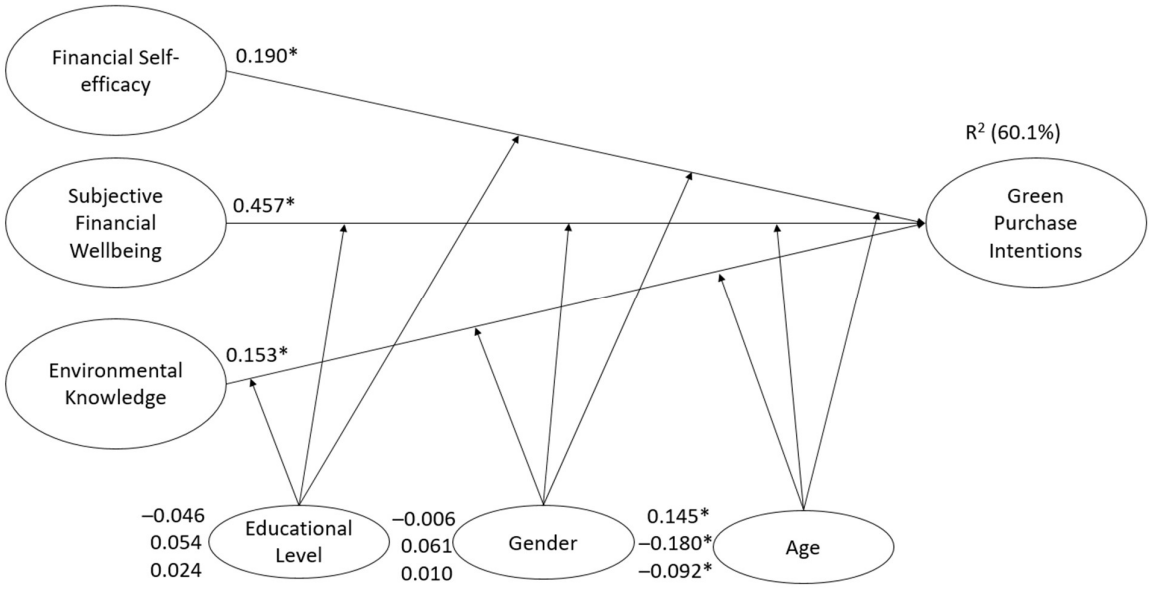

Figure 2. Output of SEM. Note: *indicates a significant level at 5%.

DISCUSSION AND CONCLUSION

The aim of this study is to investigate the impact of financial self-efficacy, subjective financial wellbeing and environmental knowledge on green purchase intention of individuals in Egypt while testing the moderating effect of educational level, gender and age.

Regarding environmental knowledge, these results are consistent with the findings of [19], as the findings suggested that environmental knowledge can eventually push customers towards purchasing green products. Regarding environmental knowledge, younger generations are more aware of environmental issues as the Egyptian government is recently focusing on environmental issues. For example, the Egyptian government enforced some laws regarding energy saving and hosted

events, such as COP27. As for financial wellbeing, these results are in line with Ali, El Rouby [29] as well as Hampson, Ma [50] that found a positive relationship between the personal financial wellbeing and buying more green products.

The results revealed that when individuals have environmental knowledge and are financially confident of their current and future situation, they tend to buy green products. The results indicated that only age could negatively moderate the direct relationship between subjective financial wellbeing and environmental knowledge and green purchase intention as (ß = −0.180, *p*-value is 0.011) and (ß = −0.092, *p*-value is 0.048), respectively, and positively moderate the direct relationship between financial self-efficacy and green purchase intention as (ß = 0.145, *p*-value is 0.000). This result contradicts with the findings of Ham, Chung [73], Witek and Kuzniar [77] and Witek and Kuźniar [71] as their results revealed that age can significantly impact purchase intention. Accordingly, when individuals are older, they have a higher position in their organisations and consequently higher income. This increases their confidence in their current financial position and allows them to buy green products, even if they are sold with higher prices. Witek and Kuźniar [71] added that older consumers face greater social pressure for purchasing green products as they seem to be more responsible in addressing environmental issues than are the younger generation.

However, the results of this study revealed that age negatively moderated the direct relationship between subjective financial wellbeing, environmental knowledge and green purchase intention. This indicates that as individuals are near the retirement age, they worry about the future, such as medical expenses, especially that the pension is less than their normal salary in Egypt, which pushes them to pursue products with lower price. This is a reflection of the unstable economic situation in Egypt [97] and the increase of economic challenges for the Egyptian government [98,99]. Regarding gender, results revealed that it does not significantly moderate the direct relationship between financial self-efficacy, subjective financial wellbeing, environmental knowledge and green purchase intention. This result is against the findings of Witek and Kuźniar [71], Duong, Doan [100] that highlighted that women are more aware of environmental issues as they are more sensitive towards living in a safe environment than men. Sustainability efforts in Egypt are still at their early stage [99], which can be the cause of insignificant effect of gender and educational level on green purchase intention. However, when this concept is more mature, the characteristics different between genders can significantly appear. In sum, there is still room for improvements for increasing education role in pushing individuals towards green product acquisition, as the results obtained in this study contradict with Witek and Kuźniar [71] findings as their study revealed that more educated people are more aware of the importance of buying green products, while less educated individuals focus more other aspects such as packaging.

Results revealed that financial self-efficacy, subjective financial wellbeing and environmental knowledge can positively influence green purchase intention, which is compatible with the following studies: Sh. Ahmad, Rosli [94], Kar and Patro [101], and Moazzam, Ahmad [102]. Even though combinations are not used in previous studies, they can be supported by their output. Sh. Ahmad, Rosli [94] indicated the positive relation between environmental knowledge and green purchase behaviour. This suggests that when an individual possesses sufficient knowledge about green products and their environmental impact, it will serve as a motivation for them to make a purchase. Kar and Patro [101] found that financial literacy has a positive impact on intention. This means that when the individual has enough money and the financial self-efficacy is high (trust at my financial situation) [103], that will make the individual able to buy it as the green product is expensive [104]. Regarding age, it was the only significant moderator between financial self-efficacy, subjective financial wellbeing and environmental knowledge on one hand and green purchase intention [105] on the other hand. This will help guide the service providers [106] and manufactures [39] on gaining competitive edge through focusing on green activities [107–109]. In addition, it will help them set a pricing strategy that fits the financial situation of the customers.

CONCLUSION

This research investigated the impact of environmental knowledge, financial self-efficacy and financial wellbeing on green purchasing intentions. Moreover, it presented the moderating role of the demographic characteristics of age, education level and gender. The results indicated that individuals' confidence in their capacity to handle their finances, their appraisal of their financial state and their comprehension of environmental concerns have a positive impact on their desire to make environmentally friendly purchases. Furthermore, the findings revealed that only age had a significant moderating effect on these direct relationships.

Theoretical Implications

According to the theory of green purchase behaviour, individuals are motivated to acquire green items when they become aware of the benefits associated with them. Therefore, this study investigates the impact of environmental knowledge and its impact on individuals' intentions to buy eco-friendly products. In addition, the study expanded the scope of TGPB by investigating the financial aspect of individuals, namely financial self-efficacy and subjective financial well-being, and how these factors influence green purchasing intention in a developing economy (Egypt).

To conclude, the study contributes to the domain of green supply chain management through explaining the drivers in terms of financial empowerment and environmental knowledge for green purchase intention of customers and the importance of age, gender and educational

level as moderators. The results of this research will also contribute to the expansion of the existing body of research on green purchase behaviour, as prior studies on green purchase behaviour have not specifically examined emerging nations in the Middle East, such as those discussed by Zameer, Wang [49] and Han [20]. In addition, it contributes to the debate regarding the impact of environmental knowledge on GPI as previous studies (e.g., Teoh, Khor [25]) indicated that environmental knowledge has no significant impact on GPI. Furthermore, the literature suggests that young Egyptians have information regarding green products. However, it remains uncertain if this knowledge has a definitive impact on their purchasing behaviour, as supported by Kautish, Paul [53]. The findings hold significant relevance in Egypt, given the challenge faced by all stakeholders, notably Egyptian consumers, in adopting environmentally friendly practises, as the green product culture is not a primary concern because of the unstable economic situation.

The study adds to the academic discourse by offering an alternative perspective on green purchase intention as it focuses on the financial perspective, which will help in the extending the theory, especially that previous studies that utilised theory of green purchase behaviour did not include financial perspective in the context of developing countries.

Practical Implications

The global trend for sustainability encourages developing countries and business sectors to go green besides financial gains [107,108]. The customers rank their economic concerns prior to environmental concerns when they purchase due to their financial position. This is consistent with the research results that declare a significant relationship between financial wellbeing and financial self-efficiency, and this relationship is significantly moderated with age and educational level. In this essence, this study helps business sectors through targeting the right customers with good financial self-efficiency and financial wellbeing for well-educated youth using green marketing campaign. In addition, it highlights the importance to produce green products with reasonable prices to be more affordable for different customer segments to support and extend the sustainability practices besides financial gains, which will eventually enhance organisational competitive edge, especially that focusing on green issues can enhance overall organisational performance [110] and eventually customer satisfaction [111,112]. Therefore, this study helps policy makers to achieve sustainable goals, segment and target their consumers in terms of gender, educational level and financial status, more effectively to achieve green competitive advantage.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

This study collected data from urban areas in Egypt; therefore, future studies might focus on collecting data from different locations in Egypt and outside Egypt to help generalise the findings, as generalisability will be

limited to locations with similar characteristics. In addition, the study uses snowball technique which can cause sampling biases; a longitudinal study can be carried out with a larger sample while taking into consideration different social classes to capture the dynamic relationships among the research variables over time. Although this study was conducted on an individual basis, other surveys may be carried out at institutional and organisational levels in industrial sectors. In addition, a focus on the role of educational institutions on altering behaviour towards environmental issues is needed, especially in developing economies. Moreover, one of the study limitations is that the values of Cronbach's Alpha should preferably not be much higher than 0.9; however, in the study it can be observed that some variables exceeded this value. Finally, future research can also include other green behaviour activities such as decreasing energy consumption.

DATA AVAILABILITY

The datasets generated during and/or analysed during the current study are not publicly available due to mentioning that in the questionnaire that the data will not be publicly available; in addition, it is original data (primary data), collected and analyzed by the authors.

The data will be available from the corresponding author (Ahmed Hussein Ali) on reasonable request.

AUTHOR CONTRIBUTIONS

Conceptualization, MB and AA; Methodology, MB and SB; Formal Analysis, MB; Empirical Analysis and Findings, AA and SB; Conclusion and Recommendations, MB, AA, and SB; Writing—Original Draft Preparation, MB, and AA; Writing—Review and Editing, AA, SB and MB. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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