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Research Article

VIRTUAL WORKPLACE FOR EFFECTIVE ENVIRONMENTAL SUSTAINABLE DEVELOPMENT POLICIES IN EGYPTIAN PUBLIC BANKING SECTOR

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ABSTRACT

Nowadays, growing "virtualized" world has become a new reality facing public and private organizations alike. Virtual Workplace (VW) represents a paradigm shift for managers and policy makers intended to increase effectiveness of sustainable development policies. Despite the growing body of literature focusing on the topic of the Virtual Workplace in developed countries, to date there have been few theoretical and empirical studies about developing countries, especially the MENA region. This study was inspired by the research framework proposed by Fathy El Dessouky (2011) to investigate the relationship between the VW and the effectiveness of environmental sustainable development policies in public banking sector in Egypt. The research examined five well-known Egyptian commercial public sector banks which have taken serious steps towards e-banking system. A questionnaire with four set of closed-ended predetermined questions was distributed to a random sample of 500 employees at the top, middle and executive levels of management. ATLAS.ti software was used for the analysis of data. The research determined a number of conclusions and proposals regarding the VW, in particular to satisfy the requirements of environmental sustainable development policies in developing countries.

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INTRODUCTION

Nowadays, growing "virtualized" world has become a new reality facing public and private organizations alike. Virtual Workplace (VW) represents a paradigm shift for managers and policymakers intended to increase effectiveness of sustainable development policies.

Virtual organizations are the workplace of the future. These new movements are driving organizations to "reinvent" their techniques and terms of work for more sustainable development. Susan Caminiti posted in CNBC.com that FlexJob declared that 170 US organizations are operating 100% virtually in comparison to only 26 organizations in 2014 [1]. According to a survey released in 2012 by the Society for Human Resources Management (SHRM), 46% of organizations appraised are operating by virtual teams [2].

Virtual Workplace

While researches focusing on the VW are in constant increase, the concept and its practices remain imprecise. In a broad

meaning, "VW is a workplace where a group of individuals, from the same country or from different countries, are working together using different communication technologies regardless of where they are or when precisely they start or finish their tasks or how they get done their everyday job, and that, regardless of their culture, nationality, race, gender, disability or age" (for more details see, among others, [3], [4], [5], [6], [7], [8], [9], [10], [11] and [12]).

Other authors presented the term of "virtual organizations". For them, VOs are "entities without borders or limits" [13]. This group of authors study "the mutual relationship between the development in information and communication technologies and the organizational structure, behavior, design, functions, practices, culture, values and continuous learning process" (for more details see, among others, [14], [15], [16], [17] and [18]).

A Systemic Framework for Virtual Workplace

A thorough literature review discloses that researchers are specific in their analysis. Therefore it is challenging to define all variables regarding the study of VW (for more details see,

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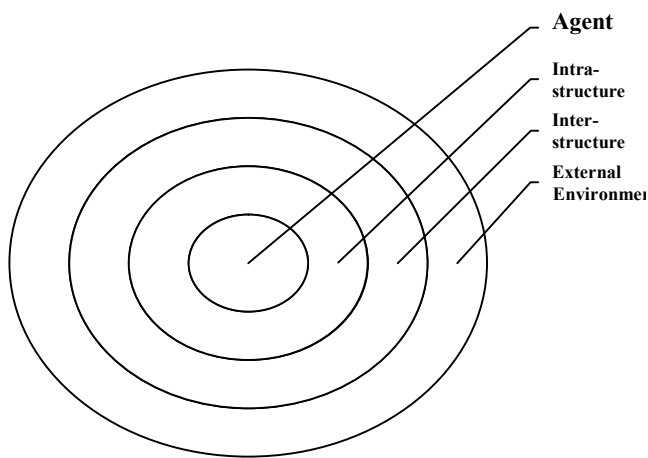
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among others, [19] and [20]). Most authors examined the VW mainly at the individuals "micro level" and the intra-organizational context "meso level". Few authors focused on the inter-organizational context "field level" and/or the external environment "macro level" of VW.

This study was inspired by the research framework proposed by Fathy El Dessouky (2011) to investigate the relationship between the VW and the effectiveness of environmental sustainable development policies in commercial public banking sector in Egypt. Fathy El Dessouky (2011) proposed the following diagram to present the VW as a continuous process where agent, intra-structure, inter-structure and external environment are affecting each other in a mutually beneficial manner [21].

Diagram (1)

Systemic framework to study the virtual workplace (VW)



Agent

Denotes the individuals working in a virtual environment. These individuals include employees and managers. This level of "micro" analysis would highlight "agents' core beliefs, interests, culture, skills and performance".

Intra-structure

Analyzes the framework that any organization would adopt to facilitate a VW. This level of "meso" analysis puts emphasis on procedural, social and technological processes. Procedural processes include "laws, rules and norms of the organization". Social processes represent all "ties, networks and trust elaborated between the organization's agents". Technological processes embody "all technological facilities for improving the VW".

Inter-structure

Refers to the "field" level of analysis which studies "the relationship between organizations or entities collaborating with each other through virtual means".

External environment

Is the "macro" level of analysis that takes into consideration the "environmental, economic, technological and social context, at

the country level", which may represent opportunities or threats for the application of the VW.

Table 1 The VW environmental advantages and challenges

Unit of Analysis	Advantages	Challenges
Agent	-Less energy consumed for daily transportation -Less CO ₂ emissions per capita -Improved health conditions & fewer diseases -Less waste coming from daily routine transactions per person	-Changing core beliefs toward the environmental issues -Convincing people about the connection between the VW & the environment -Resistance of individuals to change
Intra-Structure	-Use of friendly environment technologies -More effective Corporate Social Responsibility (CSR)	-More electricity consumption resulting from working 24/7 -Accommodation of organizations to the VW world
Inter-Structure	-Less energy and fewer CO ₂ emissions coming from transportation between organizations -Less waste coming from daily routine transactions between organizations	-Accommodation of people and organizations to the VW/environment relationship - Formulation and implementation of new environmental policies and programs, taking into consideration the VW at the organizational & governmental level
External Environment	-Better air quality -Adherence to Kyoto Protocol -Improved Waste management systems -More sustainable cities	

RESEARCH METHODOLOGY

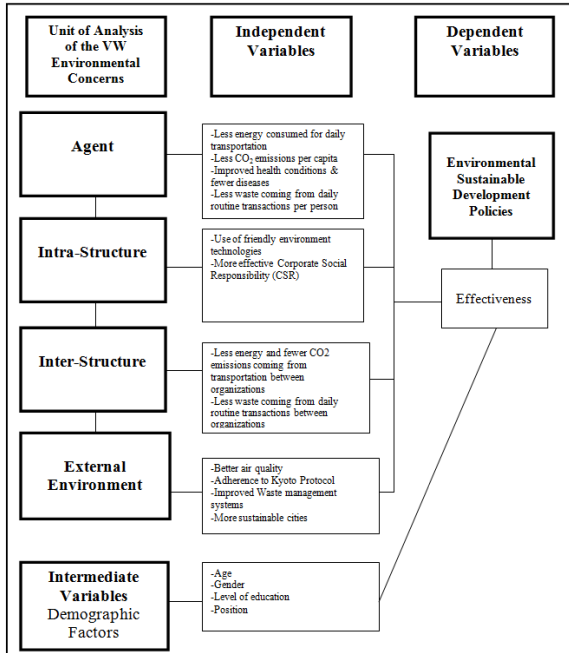
This research paper is inspired by the study proposed by Fathy El Dessouky (2011), where the author presented an exploratory research that investigates the advantages and challenges related to the implementation of the VW in Egypt. To explore the variables of VW empirically, we examined a number of the well-known Egyptian banks which have taken serious steps towards an e-banking system. We have limited our research to study only the commercial public sector banks in Egypt. These include the following banks: Banque Misr, National Bank of Egypt, Bank of Alexandria, and Banque Du Caire. A questionnaire with four set of closed-ended predetermined questions was distributed to a random sample of 500 employees at the top, middle and executive levels of management which operating mainly in Cairo branches.

Twelve independent variables are selected for this study, which include the following: "Agent" (4 variables), "Intra-Structure" (2 variables), "Inter-Structure" (2 variables) and "The External Environment" (4 variables). The dependent variable was tested by the "Effectiveness" of Environmental Sustainable Development Policies. Each of the independent variables was measured by adopting the Five-point Likert Scale ranging from

“strongly agree= 5 to strongly disagree= 1” as the following: 5. Strongly agree; 4. Agree; 3. Neither agree nor disagree; 2. Disagree and 1. Strongly disagree.

In addition, this research examined four demographic factors / intermediate variables as the following: age, gender, level of education and position.

Table 2 Framework to study VW environmental sustainable development policies



Analysis and Interpretation: The Egyptian Public Banking Sector

Table 1 Unit of Analysis of the VW Environmental Concerns Agent

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
Less energy consumed for daily transportation				450	50
Less CO2 emissions per capita			20	380	100
Improved health conditions & fewer diseases			12	380	108
Less waste coming from daily routine transactions per person			10	362	128

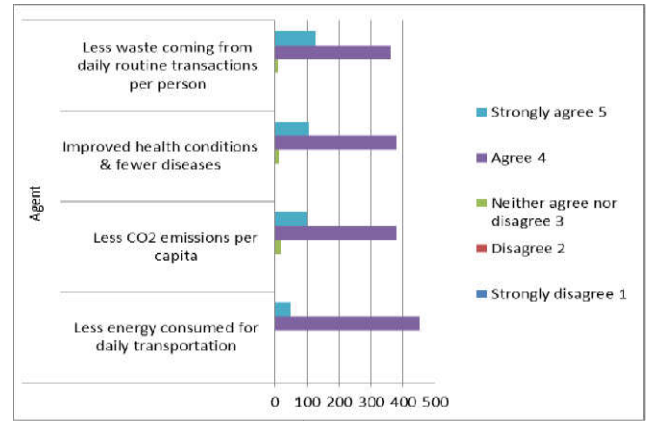
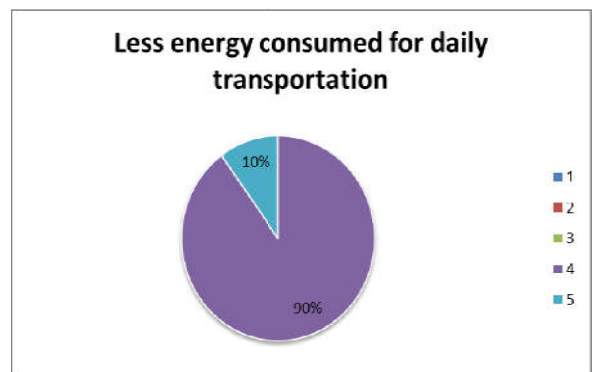


Fig 1 Unit of Analysis of the VW Environmental Concerns Agent

Table (1) and Fig (1) show the analysis of the “Agent” as a unit of analysis of the VW environmental concerns in the public banking sector in Egypt. The results affirm that the answers of employees were between strongly agree (Likert scale 5), agree (Likert scale 4) and neither agree nor disagree (Likert scale 3), nevertheless, no employee selected the answer of disagree (Likert scale 2) or strongly disagree (Likert scale 1).

For the variable “Less energy consumed for daily transportation”, 50 employees selected the answer “strongly agree” and 450 employees selected the answer “agree”. For the variable “Less CO2 emissions per capita”, 100 employees selected the answer “strongly agree”, 380 employees selected the answer “agree” and 20 employees selected “neither agree nor disagree”. For the variable “Improved health conditions & fewer diseases”, 108 employees selected the answer “strongly agree”, 380 employees selected the answer “agree” and 12 employees selected “neither agree nor disagree”. For the variable “Less waste coming from daily routine transactions per person”, 128 employees selected the answer “strongly agree” and 362 employees selected the answer “agree” and 10 employees selected “neither agree nor disagree”.

This means that the four independent variables of “Agent”: Less energy consumed for daily transportation, Less CO2 emissions per capita, Improved health conditions & fewer diseases and Less waste coming from daily routine transactions per person have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies.



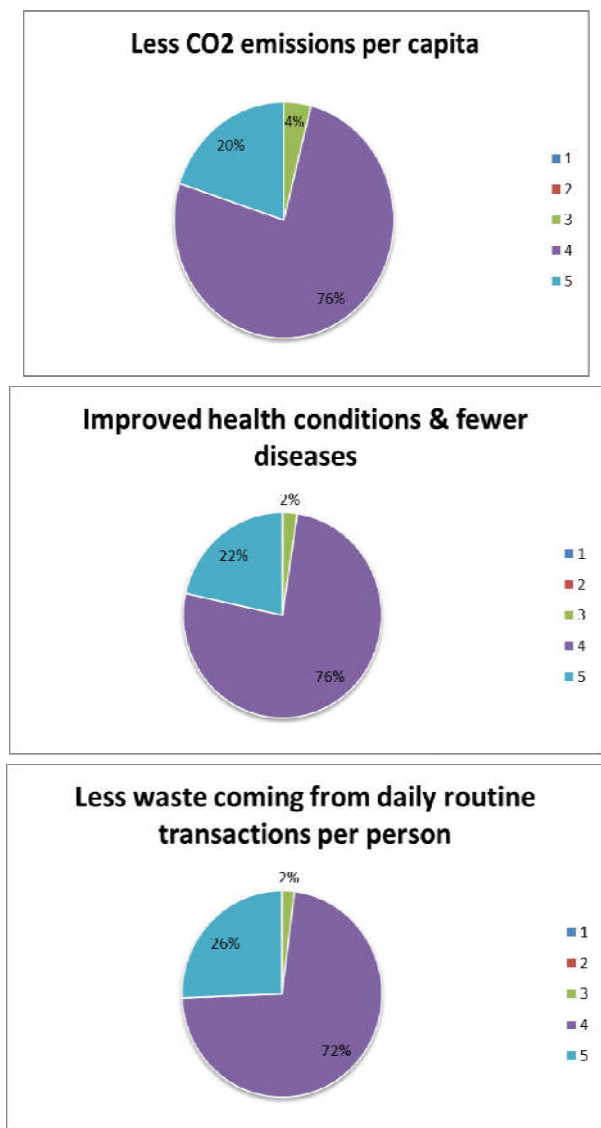


Fig 2 Unit of Analysis of the VW Environmental Concerns Agent variables percentage

From Fig (2) the results confirm that for the variable “Less energy consumed for daily transportation”, has the highest percentage where 90% of employees selected the answer “agree” and 10% of employees selected the answer “strongly agree”. For the variable “Less CO2 emissions per capita”, 76% of employees selected the answer “agree”, 20% of employees selected the answer “strongly agree” and only 4% of employees selected “neither agree nor disagree”. At the same level, for the variable “Improved health conditions & fewer diseases”, 76% of employees selected the answer “agree”, 22% of employees selected the answer “strongly agree” and only 2% employees selected “neither agree nor disagree”. For the variable “Less waste coming from daily routine transactions per person”, 72% of employees selected the answer “agree” and 26% of employees selected the answer “strongly agree” and only 2% of employees selected “neither agree nor disagree”.

The analysis reveals that the variable “Less waste coming from daily routine transactions per person” has the highest percentage of the answer “strongly agree” where 26% of employees selected this variable which represents 130 employees out of 500.

The analysis of the intermediate variables for the variable “Less waste coming from daily routine transactions per person”, shows the following:

Table 2 Intermediate Variables - Demographic Factors Age

Less than 30	31-40	41-50	More than 50	Total
82	26	14	8	130 out of 500
63%	20%	11%	6%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 82 employees which represents 63% of the total number of 130. We may conclude that the less the age the more the employees are directly related to the effectiveness to the environmental sustainable development policies and vice versa. This means the more we invest in the human capital, especially the young ages, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the employees of old ages is a must to ensure a long term sustainable environment.

Table 3 Intermediate Variables - Demographic Factors Gender

Female	Male	Total
90	40	130 out of 500
69%	31%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 90 employees which represents 69% of the total number of 130. We may conclude that females are directly related to the effectiveness to the environmental sustainable development policies in comparison to males. This means the more we empower and invest in the human capital, especially the feminine gender, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the masculine gender is a must to ensure a long term sustainable environment.

Table 4 Intermediate Variables - Demographic Factors Level of Education

Bachelor’s degree	Master’s degree	Ph.D degree	Total
19	86	25	130 out of 500
15%	66%	19%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 86 employees which represents 66% of the total number of 130. We may conclude that the higher the educational degree, especially at the Master’s degree level, the more the employees are directly related to the effectiveness to the environmental sustainable development policies in comparison to lower educational level. This means that the more we invest in the education of human capital, the more we increase the effectiveness of the environmental sustainable development policies.

Table 5 Intermediate Variables - Demographic Factors Position

First Level Management	Middel Level Management	High Level Management	Total
80	30	20	130 out of 500
62%	23%	15%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 80 employees which represents 62% of the total number of 130. We may conclude that the first level management of employees is directly related to the effectiveness to the environmental sustainable development policies in comparison to the high level management. This means that the more we invest in the training and development of human capital, especially the first level management, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the middle and high level management is a must to ensure a long term sustainable environment.

Table 6 Unit of Analysis of the VW Environmental Concerns Intra-Structure

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
-Use of friendly environment technologies				420	80
-More effective Corporate Social Responsibility (CSR)			10	370	120

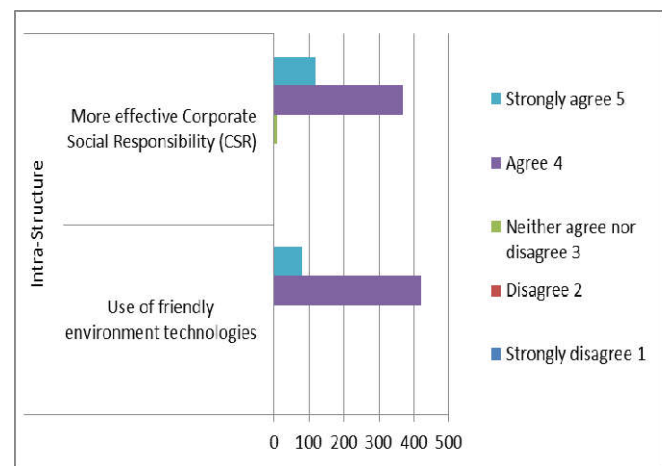


Fig 3 Unit of Analysis of the VW Environmental Concerns Intra-Structure variables percentage

Table (6) and Fig (3) show the analysis of the “Intra-Structure” as a unit of analysis of the VW environmental concerns in the public banking sector in Egypt. The results affirm that the answers of employees were between strongly agree (Likert scale 5), agree (Likert scale 4) and neither agree nor disagree (Likert scale 3), nevertheless, no employee selected the answer of disagree (Likert scale 2) or strongly disagree (Likert scale 1).

For the variable “Use of friendly environment technologies”, 80 employees selected the answer “strongly agree” and 420 employees selected the answer “agree”. For the variable “More effective Corporate Social Responsibility (CSR)”, 120 employees selected the answer “strongly agree”, 370 employees selected the answer “agree” and 10 employees selected “neither agree nor disagree”. This means that the two independent variables of “Intra-Structure”: Use of friendly environment technologies and More effective Corporate Social

Responsibility (CSR) have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies.

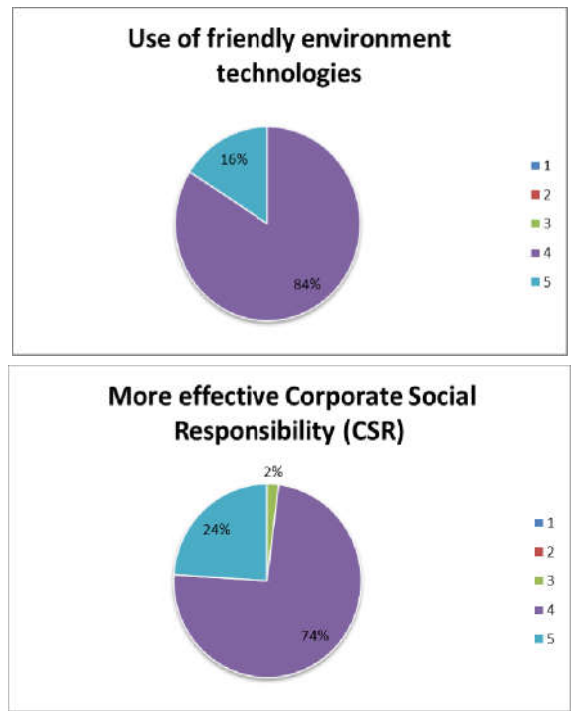


Fig 4 Unit of Analysis of the VW Environmental Concerns Intra-Structure variables percentage

From Fig (4) the results confirm that for the variable “Use of friendly environment technologies”, has the highest percentage where 84% of employees selected the answer “agree” and 16% of employees selected the answer “strongly agree”. For the variable “More effective Corporate Social Responsibility (CSR)”, 74% of employees selected the answer “agree”, 24% of employees selected the answer “strongly agree” and only 2% of employees selected “neither agree nor disagree”.

The analysis reveals that the variable “More effective Corporate Social Responsibility (CSR)” has the highest percentage of the answer “strongly agree” where 24% of employees selected this variable which represents 120 employees out of 500.

The analysis of the intermediate variables for the variable “More effective Corporate Social Responsibility (CSR)” shows the following:

Table 7 Intermediate Variables - Demographic Factors Age

Less than 30	31-40	41-50	More than 50	Total
85	20	10	6	120 out of 500
71%	17%	8%	4%	24%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 85 employees which represents 71% of the total number of 120. We may conclude that the less the age the more the employees are directly related to the effectiveness to the environmental sustainable development policies and vice versa. This means the more we invest in the human capital, especially the young ages, the more we increase the effectiveness of the

environmental sustainable development policies. Moreover, the investment in raising the awareness of the employees of old ages is a must to ensure a long term sustainable environment.

Table 8 Intermediate Variables - Demographic Factors Gender

Female	Male	Total
85	35	120 out of 500
71%	29%	24%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 90 employees which represents 69% of the total number of 130. We may conclude that females are directly related to the effectiveness to the environmental sustainable development policies in comparison to males. This means the more we empower and invest in the human capital, especially the feminine gender, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the masculine gender is a must to ensure a long term sustainable environment.

Table 9 Intermediate Variables - Demographic Factors Level of Education

Bachelor’s degree	Master’s degree	Ph.D degree	Total
10	90	20	120 out of 500
8%	75%	17%	24%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 90 employees which represents 75% of the total number of 120. We may conclude that the higher the educational degree, especially at the Master’s degree level, the more the employees are directly related to the effectiveness to the environmental sustainable development policies in comparison to lower educational level. This means that the more we invest in the education of human capital, the more we increase the effectiveness of the environmental sustainable development policies.

Table 10 Intermediate Variables - Demographic Factors Position

First Level Management	Middel Level Management	High Level Management	Total
85	20	15	120 out of 500
71%	17%	12%	24%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 85 employees which represents 71% of the total number of 120. We may conclude that the first level management of employees is directly related to the effectiveness to the environmental sustainable development policies in comparison to the high level management. This means that the more we invest in the training and development of human capital, especially the first level management, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the middle and high level management is a must to ensure a long term sustainable environment.

Table 11 Unit of Analysis of the VW Environmental Concerns Inter-Structure

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
Inter-Structure					
-Less energy and fewer CO2 emissions coming from transportation between organizations			5	365	130
-Less waste coming from daily routine transactions between organizations				455	45

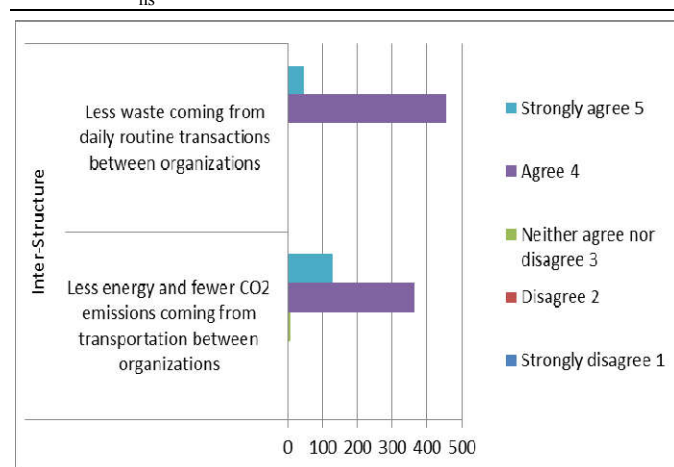


Fig 5 Unit of Analysis of the VW Environmental Concerns Inter-Structure variables percentage

Table (11) and Fig (5) show the analysis of the “Inter-Structure” as a unit of analysis of the VW environmental concerns in the public banking sector in Egypt. The results affirm that the answers of employees were between strongly agree (Likert scale 5), agree (Likert scale 4) and neither agree nor disagree (Likert scale 3), nevertheless, no employee selected the answer of disagree (Likert scale 2) or strongly disagree (Likert scale 1).

For the variable “Less energy and fewer CO2 emissions coming from transportation between organizations”, 130 employees selected the answer “strongly agree” and 365 employees selected the answer “agree” and only 5 employees selected the answer “neither agree nor disagree”. For the variable “Less waste coming from daily routine transactions between organizations”, 45 employees selected the answer “strongly agree”, 455 employees selected the answer “agree”.

This means that the two independent variables of “Inter-Structure”: Less energy and fewer CO2 emissions coming from transportation between organizations and Less waste coming from daily routine transactions between organizations have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies.

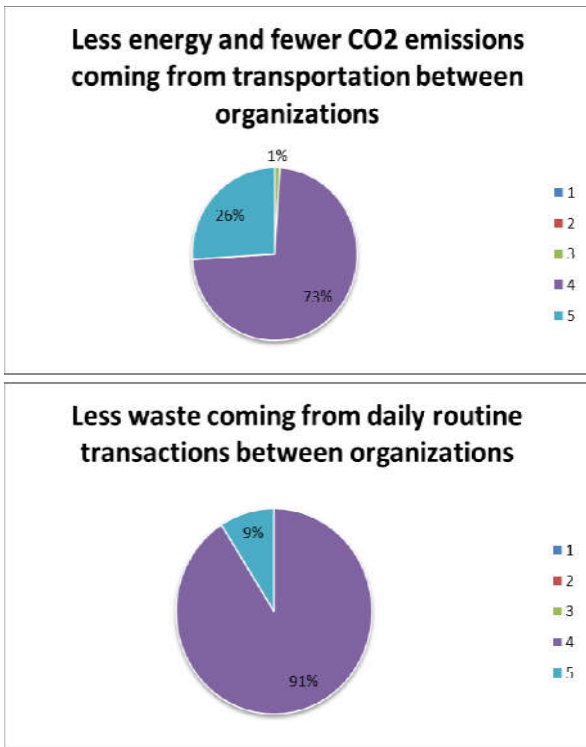


Fig 6 Unit of Analysis of the VW Environmental Concerns Inter-Structure variables percentage

From Fig (6) the results confirm that for the variable “Less waste coming from daily routine transactions between organizations”, has the highest percentage where 91% of employees selected the answer “agree” and 9% of employees selected the answer “strongly agree”. For the variable “Less energy and fewer CO2 emissions coming from transportation between organizations”, 73% of employees selected the answer “agree”, 26% of employees selected the answer “strongly agree” and only 1% of employees selected “neither agree nor disagree”.

The analysis reveals that the variable “Less energy and fewer CO2 emissions coming from transportation between organizations” has the highest percentage of the answer “strongly agree” where 26% of employees selected this variable which represents 130 employees out of 500.

The analysis of the intermediate variables for the variable “Less waste coming from daily routine transactions per person”, shows the following:

Table 12 Intermediate Variables - Demographic Factors Age

Less than 30	31-40	41-50	More than 50	Total
80	26	15	9	130 out of 500
62%	20%	11%	7%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 80 employees which represents 62% of the total number of 130. We may conclude that the less the age the more the employees are directly related to the effectiveness to the environmental sustainable development policies and vice versa. This means the more we invest in the human capital, especially the young

ages, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the employees of old ages is a must to ensure a long term sustainable environment.

Table 13 Intermediate Variables - Demographic Factors Gender

Female	Male	Total
92	38	130 out of 500
71%	29%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 92 employees which represents 71% of the total number of 130. We may conclude that females are directly related to the effectiveness to the environmental sustainable development policies in comparison to males. This means the more we empower and invest in the human capital, especially the feminine gender, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the masculine gender is a must to ensure a long term sustainable environment.

Table 14 Intermediate Variables - Demographic Factors Level of Education

Bachelor's degree	Master's degree	Ph.D degree	Total
18	88	24	130 out of 500
14%	68%	18%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 88 employees which represents 68% of the total number of 130. We may conclude that the higher the educational degree, especially at the Master’s degree level, the more the employees are directly related to the effectiveness to the environmental sustainable development policies in comparison to lower educational level. This means that the more we invest in the education of human capital, the more we increase the effectiveness of the environmental sustainable development policies.

Table 15 Intermediate Variables - Demographic Factors Position

First Level Management	Middel Level Management	High Level Management	Total
80	28	22	130 out of 500
62%	21%	17%	26%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 80 employees which represents 62% of the total number of 130. We may conclude that the first level management of employees is directly related to the effectiveness to the environmental sustainable development policies in comparison to the high level management. This means that the more we invest in the training and development of human capital, especially the first level management, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the middle and high level management is a must to ensure a long term sustainable environment.

Table 16 Unit of Analysis of the VW Environmental Concerns External Environment

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
	1	2	3	4	5
-Better air quality				453	47
Adherence to Kyoto Protocol			50	362	88
-Improved Waste management systems				425	75
-More sustainable cities			42	380	78

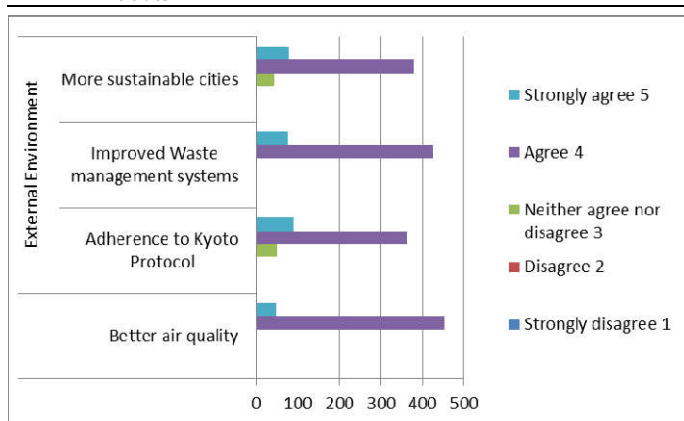


Fig 7 Unit of Analysis of the VW Environmental Concerns External Environment variables percentage

Table (16) and Fig (7) show the analysis of the “External Environment” as a unit of analysis of the VW environmental concerns in the public banking sector in Egypt. The results affirm that the answers of employees were between strongly agree (Likert scale 5), agree (Likert scale 4) and neither agree nor disagree (Likert scale 3), nevertheless, no employee selected the answer of disagree (Likert scale 2) or strongly disagree (Likert scale 1).

For the variable “Better air quality”, 47 employees selected the answer “strongly agree” and 453 employees selected the answer “agree”. For the variable “Adherence to Kyoto Protocol”, 88 employees selected the answer “strongly agree”, 362 employees selected the answer “agree” and 50 employees selected “neither agree nor disagree”. For the variable “Improved Waste management systems”, 75 employees selected the answer “strongly agree”, 425 employees selected the answer “agree”. For the variable “More sustainable cities”, 78 employees selected the answer “strongly agree” and 380 employees selected the answer “agree” and 42 employees selected “neither agree nor disagree”.

This means that the four independent variables of “External Environment”: Better air quality, Adherence to Kyoto Protocol, Improved Waste management systems and More sustainable cities have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies.

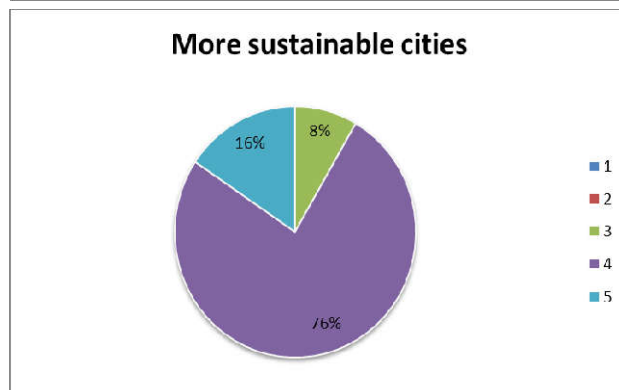
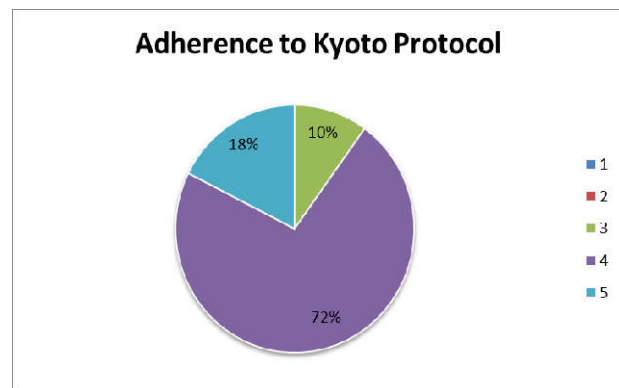
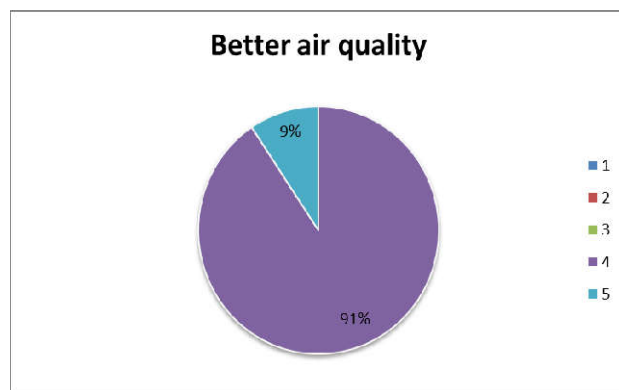


Fig 8 Unit of Analysis of the VW Environmental Concerns External Environment variables percentage

From Fig (8) the results confirm that the two variables “Better air quality” and “Improved Waste management systems” have the highest percentages of the employees’ answers of “strongly agree” and “agree”. For the variable “Better air quality” 91% of employees selected the answer “agree” and 9% of employees selected the answer “strongly agree”. For the variable

“Improved Waste management systems” 85% of employees selected the answer “agree” and 15% of employees selected the answer “strongly agree”. For the variable “Adherence to Kyoto Protocol”, 72% of employees selected the answer “agree”, 18% of employees selected the answer “strongly agree” and only 10% of employees selected “neither agree nor disagree”. For the variable “More sustainable cities”, 76% of employees selected the answer “agree”, 16% of employees selected the answer “strongly agree” and only 8% employees selected “neither agree nor disagree”.

The analysis reveals that the variable “Adherence to Kyoto Protocol” has the highest percentage of the answer “strongly agree” where 18% of employees selected this variable which represents 90 employees out of 500.

The analysis of the intermediate variables for the variable “Adherence to Kyoto Protocol” shows the following:

Table 17 Intermediate Variables - Demographic Factors

Age				
Less than 30	31-40	41-50	More than 50	Total
52	20	12	6	90 out of 500
58%	22%	13%	7%	18%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 52 employees which represents 58% of the total number of 90. We may conclude that the less the age the more the employees are directly related to the effectiveness to the environmental sustainable development policies and vice versa. This means the more we invest in the human capital, especially the young ages, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the employees of old ages is a must to ensure a long term sustainable environment.

Table 18 Intermediate Variables - Demographic Factors

Gender		
Female	Male	Total
62	28	90 out of 500
69%	31%	18%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 62 employees which represents 69% of the total number of 90. We may conclude that females are directly related to the effectiveness to the environmental sustainable development policies in comparison to males. This means the more we empower and invest in the human capital, especially the feminine gender, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the masculine gender is a must to ensure a long term sustainable environment

Table 19 Intermediate Variables - Demographic Factors
Level of Education

Bachelor’s degree	Master’s degree	Ph.D degree	Total
14	56	20	90 out of 500
16%	62%	22%	18%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 56 employees which represents 62% of the total number of 90. We may conclude that the higher the educational degree, especially at the

Master’s degree level, the more the employees are directly related to the effectiveness to the environmental sustainable development policies in comparison to lower educational level. This means that the more we invest in the education of human capital, the more we increase the effectiveness of the environmental sustainable development policies.

Table 20 Intermediate Variables - Demographic Factors
Position

First Level Management	Middel Level Management	High Level Management	Total
60	20	10	90 out of 500
67%	22%	11%	18%

The analysis illustrates that the highest number of employees who selected the answer of “Strongly agree” is 60 employees which represents 67% of the total number of 90. We may conclude that the first level management of employees is directly related to the effectiveness to the environmental sustainable development policies in comparison to the high level management. This means that the more we invest in the training and development of human capital, especially the first level management, the more we increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the middle and high level management is a must to ensure a long term sustainable environment.

CONCLUSION

The existing literature demonstrates the need of a systemic framework to study the VW notion, especially in developing countries, taking into considerations most significant variables related to this subject. The research examined five well-known Egyptian commercial public sector banks which have taken serious steps towards e-banking system.

The results confirmed that the four independent variables of “Agent”: Less energy consumed for daily transportation, Less CO2 emissions per capita, Improved health conditions & fewer diseases and Less waste coming from daily routine transactions per person have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies. The analysis revealed that the variable “Less waste coming from daily routine transactions per person” has the highest percentage of the answer “strongly agree”.

The results confirmed that the two independent variables of “Intra-Structure”: Use of friendly environment technologies and More effective Corporate Social Responsibility (CSR) have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies. The analysis revealed that the variable “More effective Corporate Social Responsibility (CSR)” has the highest percentage of the answer “strongly agree”.

The results revealed that the two independent variables of “Inter-Structure”: Less energy and fewer CO2 emissions coming from transportation between organizations and Less waste coming from daily routine transactions between organizations have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies. The variable “Less energy and fewer CO2 emissions coming from transportation between

organizations” has the highest percentage of the answer “strongly agree”.

The results confirmed that the four independent variables of “External Environment”: Better air quality, Adherence to Kyoto Protocol, Improved Waste management systems and More sustainable cities have a significant relationship to the dependent variable effectiveness of the environmental sustainable development policies. The variable “Adherence to Kyoto Protocol” has the highest percentage of the answer “strongly agree”.

For all the independent variables, the analysis of the intermediate variables / Demographic Factors for the “Age, Gender, Level of education and Position” confirmed the following:

The less the age the more the employees are directly related to the effectiveness to the environmental sustainable development policies and vice versa.

Females are directly related to the effectiveness to the environmental sustainable development policies in comparison to males.

The higher the educational degrees, especially at the Master’s degree level, the more the employees are directly related to the effectiveness to the environmental sustainable development policies in comparison to lower educational level.

The executive level management of employees is directly related to the effectiveness to the environmental sustainable development policies in comparison to the high level management.

Recommendations

It is crucial to invest in the human capital, especially the young ages, to increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the employees of old ages is a must to ensure a long term sustainable environment.

It is important to empower and invest in the human capital, especially the feminine gender, to increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the masculine gender is a must to ensure a long term sustainable environment.

The investment in the education of human capital is a fundamental policy to increase the effectiveness of the environmental sustainable development policies.

It is pivotal to invest in the training and development of human capital, especially the first level management, to increase the effectiveness of the environmental sustainable development policies. Moreover, the investment in raising the awareness of the middle and high level management is a must to ensure a long term sustainable environment.

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**Appendix I
Questionnaire**

Age: Gender:
Level of Education: Position:

1.Strongly disagree; 2.Disagree; 3.Neither agree nor disagree; 4.Agree; 5.Strongly agree

	1	2	3	4	5
i. Agent					
1. Less energy consumed for daily transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Less CO2 emissions per capita	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Improved health conditions & fewer diseases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Less waste coming from daily routine transactions per person	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ii. Intra-Structure					
1. Use of friendly environment technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. More effective Corporate Social Responsibility (CSR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iii. Inter-Structure					
1. Less energy and fewer CO2 emissions coming from transportation between organizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Less waste coming from daily routine transactions between organizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iv. External Environment					
1. Better air quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Adherence to Kyoto Protocol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Improved Waste management systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. More sustainable cities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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