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Awareness and Behavior on Mobile Phone Hazardous Waste Management : A Case Study among Youth in Bangkok Metropolitan

ความตระหนักและพฤติกรรมในการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่ : กรณีศึกษาเยาวชนในเขตกรุงเทพมหานคร

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Abstract

The purposes of this research were to examine the students' Awareness and Behavior on Mobile Phone Hazardous Waste Management (ABMPWM) comparative studies of dependent variables among the levels of independent variables and their Corresponding correlation's between their exposure to information and ABMPWM and to yield the appropriate means for managing mobile phone waste. The survey research using self-administered questionnaires was conducted on 450 random samples from 264,027 students with study standing at junior and senior high school in Bangkok. The analytical statistical methods used were percentage, mode, mean, S.D. (Standard Deviation), T-Test, F-Test, One-way ANOVA Analysis, Correlation Analysis and Regression Analysis & Prediction Model.

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The level of the Awareness on Mobile Phone Hazardous Waste Management index (AMPHWM index) was high. The AMPHWM index of men was higher than women and significance difference ($p<.05$). The group of 13-14years of age had AMPHWM index at the highest level. The samples of junior high school students had higher AMPHWMindex than the group of senior high school students. The group of students who bought the mobile phone themselves had higher AMPHWM index than the others. The group of students belonging the mobile phone with 15,000 baht had higher AMPHWM index than the low price. The group of students paying service charge monthly about 301-500 had higher AMPHWM index than the group paying more or less. The group of exposure to information had higher AMPHWM than no exposure to information group. Most of students received information from T.V.. The Awareness on Management of Mobile Phone Waste of the group of exposure to information and the group did not expose to information had correlation to the Behavior on Management of Mobile Phone Waste. The level of the Behavior on Mobile Phone Hazardous Waste Management index (BMPHWM index) was average. The BMPHWM index of men was higher than women. The group of 13-14 years of age had higher than the others. The samples of junior high school students had higher BMPHWM index than the group of senior high school students. The group of students who bought the mobile phone themselves had higher BMPHWM index than the others. The group of students belonging the mobile phone with more 8,001-15,000 baht had higher BMPHWM index than the lower and higher price. The group of students paying service charge monthly about 301-500 had higher BMPHWM than the group paying more or less. The group of exposure to information had higher BMPHWM index than no exposure to information group. The group of students received information from internet or electric media had higher BMPHWM index than the group students who received the information from the others.

There were 3 method and strategy on the mobile phone waste management as follows : The behavior and operation by the accomplice for suitable management should cover 6 persons and organization groups. They were : (1) The youth using mobile phone. (2) Family or guardian of the youth using mobile phone. (3) The education institutes and communities of the youth living. (4) The stores (selling the mobile phone) (5) The distributors and producer of the mobile phone. (6) The government sectors and private sectors. There were activities to make the concrete effect by creating the suitable measures in activity design for the aims of awareness with public media and awake to protest the wrong practice.We should support the operation to continue study or to expand the boundary which widen the scope by covering electronic waste which should have the multiple mobile phone waste.

Keywords: Mobile Phone HazardousWaste, Awareness, Behavior.

บทคัดย่อ

การศึกษาวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาความตระหนักและพฤติกรรมในการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่ศึกษาเชิงเปรียบเทียบของตัวแปรตามระหว่างระดับต่าง ๆ กันของตัวแปรอิสระ ศึกษาความสัมพันธ์ระหว่างการรับรู้ข่าวสารกับความตระหนักและพฤติกรรมในการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่ และนำเสนอแนวทางที่เหมาะสมสำหรับการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่ เป็นการศึกษาวิจัยเชิงการสำรวจจากกลุ่มประชากรที่กำลังศึกษาในระดับมัธยมศึกษาตอนต้นและมัธยมศึกษาตอนปลายของโรงเรียนในสังกัดสำนักงานการศึกษาขั้นพื้นฐาน (สพฐ.) กระทรวงศึกษาธิการในเขตกรุงเทพมหานคร จำนวนทั้งสิ้น 264,027 คน สุ่มมาเป็นกลุ่มตัวอย่างได้ 450 คน เครื่องมือที่ใช้ใช้แบบสอบถามในการเก็บข้อมูลปฐมภูมิ และนำมาประมวลผลด้วยคอมพิวเตอร์โดยการใช้โปรแกรมคำสั่งสำเร็จรูปใช้การวิเคราะห์ด้วยวิธีการทางสถิติได้แก่ ค่าแจกแจง

ความถี่ค่าร้อยละ ค่าเฉลี่ย และค่าส่วนเบี่ยงเบนมาตรฐาน วิเคราะห์เปรียบเทียบตัวแปรด้วยสถิติ ค่า T-test และ F- test วิเคราะห์ความแปรปรวนทางเดียว (One-way ANOVA Analysis) วิเคราะห์ค่าสหสัมพันธ์ของตัวแปรด้วยสถิติ Correlation Analysis และสมการพยากรณ์ถดถอย (Regression Analysis & Prediction Model)

ผลการวิเคราะห์เชิงสถิติกลุ่มตัวอย่างได้ดัชนี “ความตระหนักในการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่” อยู่ในระดับสูง เพศชายได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงกว่าเพศหญิงและมีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 กลุ่มอายุ 13-14 ปี ได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงที่สุด กลุ่มที่ศึกษาอยู่ระดับมัธยมศึกษาตอนต้นได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงกว่าระดับมัธยมศึกษาตอนปลาย กลุ่มที่ซื้อโทรศัพท์เคลื่อนที่ด้วยเงินของตนเองได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงกว่ากลุ่มที่ได้มาด้วยวิธีการอื่น ๆ กลุ่มที่ซื้อโทรศัพท์เคลื่อนที่ในราคา 15,000 บาทขึ้นไป ได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงกว่ากลุ่มที่ซื้อในราคาต่ำกว่า กลุ่มที่มีค่าบริการในการใช้โทรศัพท์เคลื่อนที่เฉลี่ยต่อเดือน 301-500 บาท ได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงกว่ากลุ่มที่มีค่าบริการในการใช้โทรศัพท์เคลื่อนที่เฉลี่ยต่อเดือนสูงกว่าและต่ำกว่า กลุ่มที่ได้รับรู้ข่าวสารได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงกว่ากลุ่มที่ไม่ได้รับรู้ข่าวสาร กลุ่มที่ได้รับรู้ข่าวสารจากโทรทัศน์ได้ดัชนี “ความตระหนักในการจัดการซากของเสีย” สูงกว่ากลุ่มที่ได้รับรู้จากแหล่งอื่น ๆ ดัชนี “ความตระหนักในการจัดการซากของเสีย” ของกลุ่มที่รับรู้ข่าวสารและไม่ได้รับรู้ข่าวสารมีความสัมพันธ์กับดัชนี “พฤติกรรมการจัดการซากของเสีย” มีค่าสหสัมพันธ์ $r = 0.395$ ค่าดัชนี “พฤติกรรมการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่” อยู่ในระดับปานกลางเพศชายได้ดัชนี “พฤติกรรมการจัดการซากของเสีย” ที่สูงกว่าเพศหญิง กลุ่มอายุ 13-14 ปี ได้ดัชนี “พฤติกรรมการจัดการซากของเสีย” สูงกว่ากลุ่มอายุอื่น ๆ กลุ่มมัธยมศึกษาตอนต้นได้ดัชนี “พฤติกรรมการจัดการซากของเสีย”สูงกว่าระดับมัธยมศึกษาตอนปลาย กลุ่มที่ซื้อโทรศัพท์เคลื่อนที่ด้วยเงินของตนเองได้ดัชนี “พฤติกรรมการจัดการซากของเสีย” สูงกว่ากลุ่มที่ได้โทรศัพท์เคลื่อนที่มาด้วยวิธีการอื่น ๆ กลุ่มที่

ซื้อโทรศัพท์เคลื่อนที่ในราคา 15,000 บาทขึ้นไปได้ดัชนี “พฤติกรรมการใช้โทรศัพท์เคลื่อนที่” สูงกว่ากลุ่มที่ซื้อในราคาสูงกว่าและต่ำกว่า กลุ่มที่มีค่าบริการเฉลี่ยต่อเดือน 301–500 บาท ได้ดัชนี “พฤติกรรมการจัดการซากของเสีย” สูงกว่ากลุ่มที่มีค่าบริการต่อเดือนสูงกว่าและต่ำกว่า กลุ่มที่ได้รับรู้ข่าวสารเกี่ยวกับซากและการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่ได้ดัชนี “พฤติกรรมการจัดการซากของเสีย” สูงกว่ากลุ่มที่ไม่ได้รับรู้ข่าวสารกลุ่มที่ได้รับรู้ข่าวสารจากอินเตอร์เน็ต/สื่ออิเล็กทรอนิกส์ได้ดัชนี “พฤติกรรมการจัดการซากของเสีย” สูงกว่ากลุ่มที่ได้รับรู้ข่าวสารจากแหล่งอื่น ๆ แนวทางและกลยุทธ์ในการจัดการซากของเสียที่เกิดจากโทรศัพท์เคลื่อนที่ ใน 3 ประการ ดังนี้ ประการแรกการปฏิบัติตนและการดำเนินการโดยผู้เกี่ยวข้องเพื่อการบริหารจัดการที่เหมาะสม ควรจะให้ครอบคลุมถึงบุคคลและองค์กร 6 กลุ่ม ได้แก่ (1) เยาวชนผู้ใช้โทรศัพท์เคลื่อนที่ (2) ครอบครัว หรือผู้ปกครองของเยาวชนผู้ใช้โทรศัพท์เคลื่อนที่ (3) สถานศึกษาและชุมชนที่เยาวชนสังกัดอยู่ (4) ร้านค้า (ผู้จำหน่ายโทรศัพท์เคลื่อนที่) (5) ตัวแทนจำหน่ายและผู้ผลิตโทรศัพท์เคลื่อนที่ (6) องค์กรภาครัฐและองค์กรภาคเอกชน ประการที่สองการจัดให้มีกิจกรรมเพื่อการกระตุ้นให้เกิดผลที่เป็นรูปธรรมด้วยการวางมาตรการที่เหมาะสมในการออกแบบกิจกรรม ทั้งนี้ เพื่อมุ่งหวังให้เกิดความตระหนักด้วยสื่อสาธารณะ และการปลุกให้เกิดกระแสการต่อต้านของการปฏิบัติที่ไม่ถูกต้อง ประการที่สามการสนับสนุนให้มีการดำเนินการเพื่อการศึกษาต่อเนื่องหรือการขยายขอบเขตที่ต่อยอดให้ในขอบข่ายที่กว้างขวางยิ่งขึ้น โดยให้ครอบคลุมถึงการจัดการขยะอิเล็กทรอนิกส์ด้วย ซึ่งน่าจะมีปริมาณมากกว่าซากโทรศัพท์เคลื่อนที่อีกหลายเท่าตัว

คำสำคัญ: ซากของเสียจากโทรศัพท์เคลื่อนที่ ความตระหนัก พฤติกรรม

Introduction

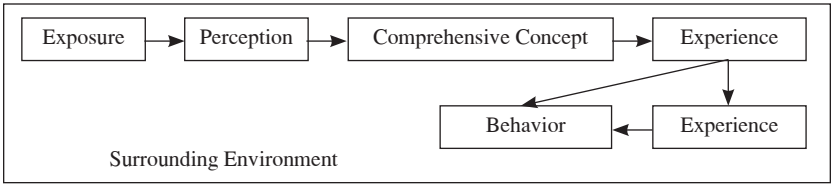
The current situations ofMobile Phone Hazardous Waste Management were of critical problems. The waste amount is quite rapidly escalated. The trash was disposed with full neglecting in conjunction with other non-toxic waste.

When these wastes were separated and eradicated in usual manner (e.g. Landfill or Burning and etc.), the heavy and toxic metals were still leaking and well spread all over.

The consequences of these hazardous contaminations would yield vital effects on human and living creature health. The essential ingredients (of which they are heavy metals and hazardous materials) in the mobile phones are listed as: Coppers Bromine Cadmium Lead Nickel and other allied Liquid crystals including the plastic material. The components in phone batteries are extensive covering of Nickel, Cadmium, Lithium and Metallic Hydride. Also, Lead is normally included in the process of welding of all the circuits. The health evil implication of these (mentioned) hazardous metals on undesirable human critical symptoms are as follow: Lead is poisonous to animals and humans, damaging the nervous system and causing brain disorders. Excessive lead also causes blood disorders in mammals. Lead is a neurotoxin that accumulates both in soft tissues and the bones. Cadmium cause flu-like symptoms including chills, fever, and muscle ache sometimes referred to as "the cadmium blues." Symptoms may resolve after a week if there is no respiratory damage. Arsenic symptoms begin with headaches, confusion, severe diarrhea, drowsiness, hair loss, stomach pain, and more convulsions. The organs of the body that are usually affected by arsenic poisoning are the lungs, skin, kidneys, and liver. The final result of arsenic poisoning is coma and death. Lithium cause kidney failure, memory problems, movement disorders and Problems keeping salts in your body psychosis.

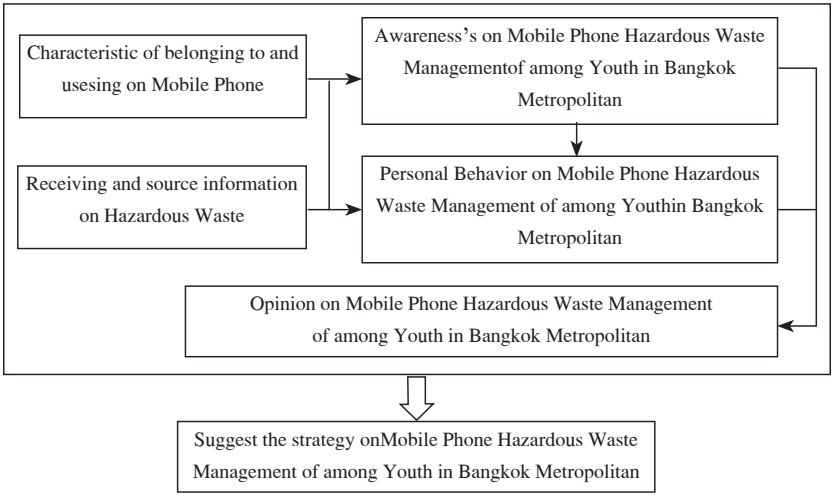
As the sequel, it was quite necessity for all of the mobile phone users (especially the youth which is the majority group) should payfull attention to overcome these problem via proper introducing of the **"Mobile Phone Hazardous Waste Management Action Program".** These were the reasons and justification standing behind this valuable research.

Awareness Process Diagram:



Source: Good, C.V., 1973

Theoretical framework:



Objectives

The main objectives of this study were listed as :

1. To study the "Awareness's" and "Personal Behavior" in Mobile Phone Hazardous Waste Management, Among the youth residing in Bangkok Metropolitan (A Comparative Study between the independentVariables of various levels),

2. To study the Relationship (Cause and Consequences) between "Personal Behavior" in Mobile Phone Hazardous Waste Management, with all other precedent factors (variables), and

3. To seek and appropriate proposes the effective strategic actions (combined options) for overcoming the Mobile Phone Hazardous Waste Management, (among the youth in Bangkok Metropolitan).

Methodology

This action study is categorized as "A Survey Research" for which the sampling survey was adopted to be the information collection procedures. The field operation was employed by an appropriate question form for data collecting. The proper sample size for the survey was 450 youth from Bangkok Metropolitan. Those samples were randomly selected from the universal population of all high school students attached with the Office of Compulsory Education, (Bangkok Metropolitan)-Ministry of Education. The global size of population was 264,027 students.

The data and information management was processed and statistically analyzed with the auspices and privileges of software SPSS/FW. The obtained results and findings were proposed in to three portions, e.g. (1) the preliminary profiles of the respondents, (2) the comparative results of all dependent variables by their corresponding independent variables. The essential statistical tests were also induced by employing T-test, F-test and the Analysis of Variance-ANOVA. And (3) The relational or effect and causal analysis were finally applied with the statistical capabilities of the conservative Multi-Varieties Statistical Features. They were, the Simple Correlation Analysis, theMultiple Correlation Analysis, and the Regression Analysis & Prediction Modeling.

Meaning of level scoreIndex of "Awareness's on Mobile Phone Hazardous Waste Management" and "Personal Behavior on Mobile Phone Hazardous Waste Management" analysis base on three levels : low, medium and high as Table 1 below.

Table 1: Meaning of level score index

Index	Level	Level score
1. Awareness's on Mobile Phone Hazardous Waste Management	low	0-33.33
2. Personal Behavior on Mobile Phone Hazardous Waste Management	medium	33.34-66.66
	high	66.67-100.00

The Summarized Results

The research results were summarized and presented in all effects of "Key Indicators or "Indices". They were comprised into six global indices, e.g.

(1) Index of Knowledge and Understanding on "Mobile Phone Hazardous Waste Management"

(2) Index of Awareness's on "Mobile Phone Hazardous Waste Management"

(3) Index of Personal Behavior on "Procession and Utilization of Mobile Phones"

(4) Index of Personal Behavior on "Mobile Phone Hazardous Waste Management"

(5) Index of Attitude and Perception on "Procession and Utilization of Mobile Phones"

(6) Index of Attitude and Perception on "Mobile Phone Hazardous Waste Management"

The essential results were presented in condensed manner in the tabulation format for 7 tables. These were to communicate at the full and complete pictures in the comparative features of all six " Key Indicators" above. The five independent variables were selected to be involved in this presentation : "Informational Status" [two groups], "Age-Groups" [three levels], "Gender" [two levels], "Education" [two levels], and "Monthly Expenditure Spending" [three levels]. The results were proposed in Table 1 through Table 4.

Table 2 had expressed and logical confirmed that all of the respondents who belong to the "Informing" Group had shown **HIGHER** values of all six indices than those of the "Non-Informing" Group across the board at some significant levels. This had re-iterated that the exposing to information on "Mobile Phone Hazardous Waste Management"do have direct effects on the key indices of the study. This evidence would suggest that the input of spreading of the proper knowledge andthe disseminating of information pertainingto the proper "Hazardous Waste Management" are highly advisable among the teenagers (residing in Bangkok Metropolitan Area-and hopefully in the other areas also, as well).

Table 3 had yielded comparable figures of these indices among the different age-groups of the teenager respondents. However, the younger groups may tend to have slightly higher index values for the first five indices and the sixth index had shown compatibility values at the three age-groups. The explanation would be that the elder teenagers could pay more attention and much care for on other interested engagements other than the environmental matters of environmental issues, especially, the "Mobile Phone Hazardous Waste Management" concerns.

Table 2: The average values of "Study Indicators", the comparison between the two groups of "Non-Informing" vs. "Informing" onMobile Phone Hazardous Waste Management.

The Key Indices	Informational Status		Total
	Non-informing	Informing	
1. Index of Knowledge and Understanding on "Mobile Phone Hazardous Waste Management"	75.454	78.488	76.98
2. Index of Awareness's on "Mobile Phone Hazardous Waste Management"	76.150	78.009	77.08
3. Index of Personal Behavior on "Procession and Utilization of Mobile Phones"	58.232	59.938	59.09
4. Index of Personal Behavior on "Mobile Phone Hazardous Waste Management"	59.777	60.280	60.03
5. Index of Attitude and Perception on "Procession And Utilization of Mobile Phones"	75.268	76.217	75.74
6. Index of Attitude and Perception on "Mobile Phone Hazardous Waste Management"	75.873	76.863	76.37

Table 3: The comparison of average values of "Study Indicators" among the three age-groups of respondents, e.g. "13-14 yrs.", "15-16 yrs." and "17-18 yrs.".

The Key Indices	Age-Groups		
	13-14 yrs.	15-16 yrs.	17-18 yrs.
1. Index of Knowledge and Understanding on "Mobile Phone Hazardous Waste Management"	79.847	76.575	76.279
2. Index of Awareness's on "Mobile Phone Hazardous Waste Management"	77.895	76.884	76.941
3. Index of Personal Behavior on "Procession and Utilization of Mobile Phones"	60.790	58.761	58.728
4. Index of Personal Behavior on "Mobile Phone Hazardous Waste Management"	60.965	60.422	59.466
5. Index of Attitude and Perception on "Procession And Utilization of Mobile Phones"	77.500	74.760	75.790
6. Index of Attitude and Perception on "Mobile Phone Hazardous Waste Management"	76.754	75.586	76.745

Table 4 had shown the figures of all six indices among the "Males" gender well dominate over those of the "Females" respondents quite significantly. This would suggest that those males were well cared or more seriously attention to the natural environment than the female teenagers. Furthermore, if any promotional input were to gear into the system, the male teenagers should be put in front lineswith a higher priority. Also, on the other side of the coin, one should accelerate in motivation with the environmental cares into the females, at least on the conceptual planning stages.

Likewise the younger teenagers, the "Secondary Education" group tend to bear higher index results than those of the higher education group, i.e. "the High School". This would also imply that the younger group (Lower Education Group) were well aware (at high significant level) of the forth coming critical issues of "Environmental Hazard", especially caused by the "Mobile Phones". Detailed description was fully shown on Table 5 also.

Table 4: The comparison of average values of "Study Indicators" between the two groups of gender, "Male" vs. "Female"

The Key Indices	Gender		Education	
	Male	Female	Secondary	High School
1. Index of Knowledge and Understanding on "Mobile Phone Hazardous Waste Management"	78.001	75.898	80.028	75.894
2. Index of Awareness's on "Mobile Phone Hazardous Waste Management"	78.593	75.491	78.411	76.611
3. Index of Personal Behavior on "Procession and Utilization of Mobile Phones"	59.238	58.932	60.390	58.627
4. Index of Personal Behavior on "Mobile Phone Hazardous Waste Management"	60.736	59.285	61.130	59.639
5. Index of Attitude and Perception on "Procession and Utilization of Mobile Phones"	76.557	74.886	76.950	75.316
6. Index of Attitude and Perception on "Mobile Phone Hazardous Waste Management"	77.537	75.140	77.533	75.957

Table 5: The comparison of average values of "Study Key Indicators" among the three groups of monthly spending on Mobile Phone Charges.

The Key Indices	Average Expenses spending on Mobile Phone Monthly Charges		
	Not exceed 300 baht	301-500 baht	501 baht or over
1. Index of Knowledge and Understanding on "Mobile Phone Hazardous Waste Management"	76.863	77.599	76.500
2. Index of Awareness's on "Mobile Phone Hazardous Waste Management"	75.559	78.007	77.860
3. Index of Personal Behavior on "Procession and Utilization of Mobile Phones"	59.528	58.629	59.050
4. Index of Personal Behavior on "Mobile Phone Hazardous Waste Management"	60.280	60.326	59.460
5. Index of Attitude and Perception on "Procession And Utilization of Mobile Phones"	74.100	76.259	77.050
6. Index of Attitude and Perception on "Mobile Phone Hazardous Waste Management"	75.859	76.814	76.500

The last story of this study were concerning of "Level of Monthly Expenditures" that teenagers had spent on the uses of Mobile Phones. The figures had shown that there were comparable results (not significant different) for the four indices, namely, (1) Knowledge, (3) Behavior on Procession of the Phones, (4) Behavior on the Waste Management and (6) Attitudinal and Perception on "Mobile Phone Hazardous Waste Management". Whereas the other two categories of index, had indicated that those teenagers with higher monthly spender stakes, would pay more attention to the current hazardous situation at some significant features. That was, the rest of the indices are : (2) the Awareness, (5) Attitudinal and Perception on "Procession and Utilization of Mobile Phones". This would imply that the more they had spent the higher intention on care and aware are evitable consequences. The complete and full results were shown on Table 4, above.

Table 6: The frequency and percentage distribution of respondents classified by "Sources of Information" on "Mobile Phone Hazardous Waste Management" that they had indicated of being exposed to.

Sources of Information	Number	Percentage	Pie Chart Displaying
Radio Broadcasting	4	1.77	
Conference/Seminar	3	1.33	
Television Media	99	43.80	
Internet or Electronically Media	109	48.23	
Publication Media	3	1.33	
Retailer or Kiosk	5	2.21	
Mobile Phone Center	3	1.33	
Total	226	100.00	

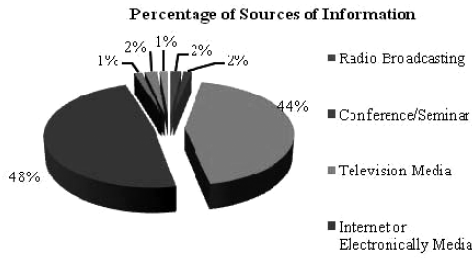


Table 7: The frequency and percentage distribution of respondents classified by their "Means for obtaining of Mobile Phones in Procession".

Means of Procession	Number	Percentage	Pie Chart Displaying
Self Support Funding	78	17.33	
Lending from Guardian	26	5.78	
Parents' Contribution	318	70.67	
Lending from friends	19	4.22	
Fiends' Courtesy	6	1.33	
Gift or Prize Winning	3	0.67	
Total	450	100.00	

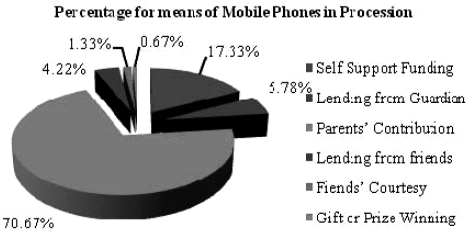


Table 6 and Table 7 displayed both in tabular form and Pie Charts. The summarized statistical profile of two Key Variables was tabulated to cover both the frequencies and their respective percentage distributions. The sources of information were in Table 5. The information on "Mobile Phone Hazardous Waste

Management" were referred by 226 out of 450 respondents from the survey. The main information sources that had had referred to were "Internet or Electronically Media" at 109 respondents or 48.23 %, and "Television Media" at 99 respondents or as much as 43.80 % , respectively. The other sources of information were rarely mentioned, there were five varieties of sources, e.g. Radio Broadcasting, Conference/Seminar /Meeting, Publication Media, Retailer or Kiosk, and Mobile Phone (Sales & Services) Center. All five sources combined to only 18 counts out of 226, or only less than 8 %.

The "Means for Obtaining Mobile Phones in Procession" among 450 respondents were majorly distributed on the three alternates.They were: Parents Contribution, Self –Support, and by Lending from Guardian at 70.67 %, 17.33 %, and 5.78 %, respectively. The global detail was supplemented and posted on the Table 7

Table 8: Displaying of the Correlation Coefficients between the Indices (Six Key Dependent Variables) and the two Targeted Indices.

The Key Indices	Targeted Indices	
	Awareness on MPHWM	Personal Behavior on MPHWM
1. Index of Knowledge and Understanding on "Mobile Phone Hazardous Waste Management"	0.251	0.075
2. Index of Awareness's on "Mobile Phone Hazardous Waste Management"	N/A	0.329
3. Index of Personal Behavior on "Procession And Utilization of Mobile Phones"	0.145	0.257
4. Index of Personal Behavior on "Mobile Phone Hazardous Waste Management"	0.294	N/A
5. Index of Attitude and Perception on "Procession And Utilization of Mobile Phones"	0.628	0.264
6. Index of Attitude and Perception on "Mobile Phone Hazardous Waste Management"	0.758	0.328

The last Table presented here, was Table 8. This Table gave quite quantifiable and understandable amount of figures, sufficed for the directional and promising trend of the MPHWM program. This table shown the relational facts among the six key indices with the two targeted indices. However, these numerical figures would embroil the confirmation of legitimate current situations.

Besides these two packages of condensed information, one may expose via the results of statistical analysis in managing of the techniques of Regression Analysis and the Prediction Equation approaches. The end analytical results were display into two equations. They were Equation 1 (the group of respondents whom had been informed with the Hazardous Waste Management Information) and Equation 2 (among the respondent without exposed to the Hazardous Waste Management matters).

[Index Value of Personal Behavior on "Mobile Phone Hazardous Waste Management"] = 42.913 +
+ 0.006*[Index Value on Knowledge and Understanding]
+ 0.228* [Index Value on Awareness of Hazardous Waste Management]

(Equation #1)

[Index Value of Personal Behavior on "Mobile Phone Hazardous Waste Management"] = 32.898 +
+ 0.089*[Index Value on Knowledge and Understanding]
+ 0.264* [Index Value on Awareness of Hazardous Waste Management]

(Equation #2)

These two above equational regression models do express the confounding relationship among the three components of research interests. Hence, this final conclusion is well covered the second objective of the research study.

There were 3 method and strategy on the mobile phone waste management as follows :

1. The behavior and operation by the accomplice for suitable management should cover 6 persons and organization groups. They were :

(1) The youth using mobile phone.

(2) Family or guardian of the youth using mobile phone.

(3) The education institutes and communities of the youth living.

(4) The stores (selling the mobile phone)

(5) The distributors and producer of the mobile phone.

(6) The government sectors and private sectors.

2. There were activities to make the concrete effect by creating the suitable measures in activity design for the aims of awareness with public media and awake to protest the wrong practice.

3. We should support the operation to continue study or to expand the boundary which widen the scope by covering electronic waste which should have the multiple mobile phone waste.

Discussion

According to all of the six (indices) factual findings from the study, the research would like to point out that the key ultimate goal is the "Behavior" among the youth residing in Bangkok Metropolitan. It had shown that the index of behavior was in MIDDLE level (around 60 %). This implies that it does require all of the social sector to participate in the "Behavior Promotion Program" for this target group of mobile phones' users. The relevant group to be involved in the global program should be both from private and governmental sectors. Moreover, all of the stakeholders ought to pay rigorous roles, e.g. mobile phone producers, distributors and the parent with corresponding guardians of all of the youths and etc.

In order to elevating the behavior component of the youth, it was indicated that we need put essential simulative effort through "knowledge-understanding" and "awareness-reception" on the proper Mobile Phone Hazardous Waste Management as well.

Conclusions

1) The results of the study are from 6 indexes by comparison among the various levels of independent variables. From study, we get 9 results. They are : The more 90 % informants indicated that they got information on hazardous waste management from "television" or "electronic media". It showed that the characters of Thai youths interested in mainly television and electronic media.

2) The more 70 % informants indicated that they belonged to mobile phone by parents or guardian and 17% by themselves.

3) The main 6 indexes for informants who received information on hazardous waste management had higher index than the group of the informants who did not get information. It indicated that receiving information made positive results to 6 main index values.(table 2)

4) In the same way, the young informants (13-14 years old) had higher index values than the older group. (table 3)

5) The 6 index values from the male group indicated had regularly higher index values than female group. It showed sex difference of index studying. (table 4)

6) In the same direction, junior high school students gave higher the index values than senior high school students. As above-mentioned results had tendency in the direction with "age group". So there were new discoveries at all.

7) The results discovered and presented in table 5 indicated that whether the level of using mobile phones (see : rate of monthly expenses)

was high or low. It showed that there had not differences of main 6 index values anyhow.

8) Table 8 showed Correlative Coefficient indexes between key 6 behavior indexes and awareness indexes which were found that Correlative Coefficient indexes values will be the highest between awareness and attitude of using mobile phone (0.628) and between awareness and attitude and receiving information on mobile phone hazardous waste management (0.758)

9) The results from Correlative Coefficient in 8) made the researcher create a simple regression equations to explain the predictive relations of the values of hazardous waste management behavior according to equation #1 and equation #2.

Recommendation

In order to utilize the valuable results of the study as gained by its experiences, one could employ in effective generation as follows;

1) It is advised to promote a similar project along the time of this study. The context and aspect of the forth coming study should be broadening in both dimensions, e.g. geographical areas (beyond the limited Bangkok Metropolitan) and the coverage of distinctive group of target population (extensive over other age group) moreover, the study may be of widely in scope to cover other compatible hazardous waste generated by other technological items, e.g. electronic equipment and/or dry cells or battery.

2) As it is known that our technological society is rapidly changed or evaluated, then one could suggest to design and implement a study to cope with the longitudinal feather of the waste management aspect as well. Thus, the designed study could be of comparative nature among all of the dynamic situation in the waste management along with the technological evolution.

3) It is strongly advised that the rigorous findings should be brought into the action measures so as to drive the expected behavior among those youths and compatible groups. This is to arrange proper logical action programs so as to overcome waste management problems occurring in public and private sectors.

4) In supplement to this existing study in relevant to awareness onbehavior, the researcher may induce the other dimension of study along of economical incentive related. Hoping that with proper initiative approaches with adding ingredients of economical promotion the irradiate of the hazardous waste could be well under way.

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