

OBSTACLES OF DIFFUSION OF INNOVATION IN DAR AL FOUAD HOSPITAL, CAIRO EGYPT

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ABSTRACT

Purpose of the study: The broad purpose of this study was to establish the obstacles of diffusion of innovations in Dar Al Fouad Hospital. The specific objectives of this study included; To determine if the leadership is knowledgeable of the new innovations that come their way, To establish if the organization is capable to ascertain which innovations are good for them by understanding all that diffusion of innovations entail and To determine why new innovations never get to be fully implemented.

Problem statement: Dar Al Fouad Hospital is a private hospital strategically positioned to attract clientele from all corners of the vast city due to its vicinity. The hospital is equipped with the modern equipment that ought to be a source of attraction of many clients but unfortunately; they have encountering management and expansion of technological innovation challenges. In this study, the researcher sought to establish what would be the reason of the unsuccessful adoption of innovation and why are innovations rejected in this organization. The hospital has been trying to adopt technological innovation of running all the patients details online, which is proving to be so hard to implement.

Study methodology: The study used a quantitative approach seeking to understand the organization in depth both contextually and holistically. The population of the study consisted of all the regular employees of Dar Al Fouad Hospital. This was considered as the population of the study. Due to the small size of the population, the study was considered a census study since it involved every member of the target population having a total of 37 people. Data was collected using a questionnaire on a 5 point Likert scale. This was arrived at due to the time consideration since the questionnaire collects data quite quickly. This study collected primary data through a structured questionnaire in which a Likert 5 scale was used. Personal administration of the questionnaires was used to administer the questionnaires to all the respondents.

Results of the study: Regression of coefficients results indicated that Knowledgeability and Diffusion are positively and significant related ($r=.232$, $p=0.001$). The results also indicated that capability and prevention and diffusion are positively and significantly related ($r=.112$, $p=0.043$). However, results showed that barriers and diffusion were negatively and significantly related ($r=-0.018$ $p=0.036$).

Conclusion: The study concluded that, knowledgeability, organizational innovation capability and new innovation implementation barriers are some of the major factors affecting diffusion in innovation in Dar Al Fouad Hospital.

Recommendations: the study it can be recommended that the management of Dar Al Fouad Hospital should encourage their employees to adopt various communication strategies as a way of enhancing diffusion in innovation in their Hospital. The hospital management should also assess the innovation capability of their employees and encourage them to embrace innovation as one way of improving diffusion in innovation in the hospital. Finally, Dar Al Fouad Hospital management should educate their employees on the importance of innovation to break the negativity in them concerning innovation and instead embrace innovation.

Keywords: *Obstacles, Diffusion of Innovation & Dar Al Fouad Hospital.*

1.1 INTRODUCTION

Diffusion is “the process in which an innovation is communicated through certain channels over time among the members of a social system” p. (5). This type of communication is very exceptional in the sense that it directs and shares messages that are related to the new ideas, services and/or products. Diffusion has four key constituents that can easily be pulled out from the definition above as follows; innovation, communication channels, time and social systems.

According to Rogers (2003), “an innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption” p. (12). This means that even when something was invented long ago and a person recognizes it as a new idea, this is still innovation for such a person. Further Rogers argues that ambiguity happens to be the main hindrance to the acceptance of innovations which may be formed by innovations’ consequences. Rogers goes further to define consequences as “changes that occur in an individual or social system as a result of the adoption or rejection of an innovation” p. (14).

On the other hand, leadership plays a vital role in directing and rallying the follower behavior in many organizations (Northouse, 2017). Therefore, it is normal to discern the changes in an organization flowing down from leaders to their followers/employees. Due to the hierarchical

nature of many organizations (Daft, Murphy, & Willmott, 2010), it will be difficult to imagine the proliferation of new products or ideas in an organization if it is not formally ratified, supported and adopted by the leadership and management. Hence, in an attempt to relate the idea of proliferation with organization leadership, it would be thought that as a policy implication, innovative ideas and technologies can be conceptualized to target preferences of organizational and societal leadership in order to achieve the desired proliferation speed.

Christensen, McDonald, Altman, and Palmer (2016) argue that the pace of progress that markets demand or can absorb may be different from the progress offered by technology. This means that products that do not appear to be useful to our customers today (that is, disruptive technologies) may squarely address their needs tomorrow. Recognizing this possibility, we cannot expect our customers to lead us toward innovations that they do not now need. Therefore, while keeping close to our customers is an important management paradigm for handling sustaining innovation, it may provide misleading data for handling disruptive ones. Trajectory maps can help to analyze conditions and to reveal which situation a company faces p. (172).

1.2 STATEMENT OF THE PROBLEM

Dar Al Fouad Hospital is a hospital in Giza, Egypt, on the outskirts of Cairo. It offers cardiothoracic surgery, cardiology, oncology, organ transplant, and orthopedic departments. Strategically positioned to attract clientele from all corners of the vast city of Giza due to its vicinity. The hospital is equipped with the modern equipment that ought to be a source of attraction of many clients but unfortunately; they have encountered management and expansion of technological innovation challenges. The core reason for this lack is that the leadership are never quick to adopt any innovation or if an innovation is adopted, it does not last long, it dies a natural death and things go back to their initial old way. In this study, the researcher wished to know what would be the reason of the unsuccessful adoption of innovation and why are innovations rejected in this organization. The hospital has been trying to adopt technological innovation of running all the patients details online which is proving to be so hard to implement.

1.3 RESEARCH OBJECTIVE

The broad purpose of this study was to establish the obstacles of diffusion of innovations in Dar Al Fouad Hospital.

The specific objectives of this study included the following;

- i. To determine if the leadership is knowledgeable of the new innovations that come their way
- ii. To establish if the organization is capable to ascertain which innovations are good for them by understanding all that diffusion of innovations entail.
- iii. To determine why new innovations never get to be fully implemented.

1.4 RESEARCH HYPOTHESIS

The study was guided by the following research hypotheses.

- i. The leadership is not knowledgeable of the new innovations that come their way
- ii. The organization is not capable to ascertain which innovations are good for them by understanding all that diffusion of innovations entail
- iii. The new innovations are not fully implemented

2.1 THEORITICAL REVIEW

2.1.1 The classical Diffusion Paradigm

According to Rogers (2003), diffusion is the process by which an innovation is communicated through particular networks over time amongst the membership of a social system. Further Dearing (2009) postulates that “diffusion studies have demonstrated a mathematically consistent sigmoid pattern (the S-shaped curve) of over time adoption for innovations that are perceived to be consequential by potential adopters, when the decisions to adopt are voluntary, and with attendant logically-related prepositions, qualifying this literature as a theory of social change”

The core elements of diffusion theory include;

The innovation and more specifically the prospective adopter perceptions of the innovation's qualities of its effectiveness and the cost of efficiency relative to other alternatives, how easy or difficult the innovation is for the potential adopter to understand it, how is this innovation going to fit into the long established ways and methods of accomplishing the same projected goal and vision, and to what extent is the potential adopter going to be committed to the full adoption of the innovation.

The adopter – different adopters have diverse degrees of innovativeness which leads to having early adopters and later adopters of the same innovation. The social system more specifically in regards to the system structures, community informal opinion leaders and the prospective adopters' perception of the social pressure to adopt the innovation. The individual's adoption process brings in the stages ordered model of being aware of the innovation, getting persuaded about the innovation, making a decision to either accept or reject the decision, implementation of the innovation and finally, continue using the innovation.

The diffusion system which is highly affected by the external change agency and its change agents who will properly pursue the innovation and intervene with the customer's systems opinion leaders, paraprofessional assistants and innovation champions. This will successfully happen if only the change agents are well trained to do this job correctly.

According to Gigerenzer and Selten (2001), diffusion will occur a combination of three elements that are very crucial in this process; a) there is a serious need for an individual to decrease personal uncertainty the moment this new innovation is presented to him/her, b) there is a dire need for an individual to react to his/her perceptions of what exactly other credible people are thinking and doing, and c) the general felt social pressure to do as others have done. The uncertainty in response to an innovation characteristically triggers the urge to search for more information and if the probable adopter is convinced that the innovation is worth a trial and it has a potential for benefits, the adopter searches for evaluative judgement from the respected and trusted individuals commonly known as the 'informal opinion leaders'. The 'advice-seeking' conduct is experiential, that will allow the person making the decision to evade wide-ranging information seeking.

2.2 EMPIRICAL REVIEW

Attributes of Innovation and the Rate of Adoption

Rogers (2003) describes the innovation diffusion process as “an uncertainty reduction process” p. (232) where he proposes attributes of innovations that help to reduce uncertainty about the innovation. These attributes include; 1) relative advantage 2) compatibility 3) complexity 4) trial-ability 5) observability. The “individuals’ perceptions of these characteristics predict the rate of adoption of innovations” p. (219). The rate of adoption is defined by Rogers as “the relative speed with which an innovation is adopted by members of a social system” p. (221). The perceived characteristics of an innovation are noteworthy forecasters of the rate of adoption of the innovation.

To add to these attributes are the innovation decision type, the communication channels, the social system and the change agents can upsurge the predictability of the rate of adoption of innovations. For example, the personal and optional innovations are usually adopted quickly than the innovations that involve collective or organizational innovation decision. But over and above it all, relative advantage proves to be the strongest predictor of the rate of adoption of an innovation (Rogers, 2003).

The attributes of innovation will be discussed individually as follows’

Relative Advantage

Rogers (2003) defines relative advantage as “the degree to which an innovation is perceived as being better than the idea it supersedes” p. (229). The cost and the social status and the motivation features of innovation are the elements of relative advantage. For instance, Sahin (2006) posit that “while innovators, early adopter, and early majority are more status motivated for adopting innovations, the late majority and laggards perceive status as less significant” p. (17).

According to Rogers (2003), the innovations are of two types; the preventive innovation which is “a new idea that an individual adopts in order to lower the probability of some unwanted future event” p. (233). Preventive innovations generally have a slower rate of adoption making their relative advantage highly uncertain while the incremental innovations provide beneficial results in a short period of time. In order for an individual to increase the rate of adoption and make the relative advantage more effective, indirect and direct financial payment incentives may be required

to be used to support the persons of a social system in adopting the innovation. Incentives play a great role of support and motivation factors.

Compatibility

Rogers (2003) defines compatibility as “the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters” p. (15). When an innovation is compatible with a person’s needs, then uncertainty will decrease and the rate of adoption of that innovation will increase. Therefore, even the aspect of naming the innovation is a very significant part of compatibility. What an innovation is called should be meaningful to the prospect adopter. Further, what the innovation means to the prospect adopter should also be very clear.

Complexity

Complexity as per (Rogers, 2003) is “the degree to which an innovation is perceived as relatively difficult to understand and use” p. (15). As stated by above complexity is the opposite to the other attributes of innovation because it is negatively correlated with the rate of adoption. If the soft and hardware are user-friendly, the adoption will be successful and faster. The converse of it is always true (Martins & Terblanche, 2003).

Trial-ability

As defined by Rogers (2003) “triability is the degree to which an innovation may be experimented with a limited basis” p. (16). Trial-ability is positively correlated with the rate of adoption. The more an innovation is tried the quicker its adoption will be. It is also evident that reinvention may happen during the trial-ability period of the innovation and it may be changed or improved by the prospect adopter. Increased reinvention may lead to faster adoptions of the innovation. The vicarious trial is very important and helpful for later adopters.

Observability

Observability is the last characteristic of innovation and (Rogers, 2003) defines it as “the degree to which the results of an innovation are visible to others” p. (16). To role model plays a key motivational role in the adoption and diffusion of technology (Parisot, 1997). Likewise, to relative advantage, compatibility, and trial-ability, observability also falls under this category of positively correlating with the rate of adoption of an innovation. It is in order to note of the remarks given by

(Rogers, 2003) that “getting a new idea adopted, even when it has obvious advantages, is difficult” p. (11). Therefore, the obtainability of all these variables of innovations speed up the innovation diffusion process.

Adopter Categories

The adopter categories are defined by (Rogers, 2003) as “ the classification of members of a social system on the basis of innovativeness” p. (22). This classification comprises of innovators, early adopters, early majority, late majority and laggards. In every classification or category, individuals are similar in terms of their innovativeness which Rogers defines as “the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a system” p. (22).

According to Braak (2001) innovativeness is “a relatively-stable, socially constructed, innovation-dependent characteristics that indicate an individual’s willingness to change his/her familiar practices” p. (144). Rogers (2003) posit that innovativeness help in understanding the anticipated and core conduct in the innovation decision process thus categorizing the adopters based on innovativeness as follows;

Innovators

Innovators according to Rogers (2003) are willing to understanding and experience new ideas. For that reason, they should be equipped to manage unsuccessful and unprofitable innovations together with a certain level of uncertainty about the innovation. According to Dearing (2009) these are usually the gatekeepers bringing the innovation in from the outside system. “They may not be respected by other members of the social system because of their venturesomeness and close relationships outside the social system. Their venturesomeness requires innovators to have complex technical knowledge” p. (19).

Therefore, Rogers (2003) posit that, the early adopters being the role models, their attitude toward the innovation is very significant. It is through the interpersonal networks that other members of the social system get to learn the early adopters’ subjective evaluations. By the adoption of the new innovation by the early adopters’ leadership there is a decrease of uncertainty about the innovation in the diffusion process. Finally, the early adopters put their stamp of approval on a new idea by adopting it” p. (283).

Early Majority

Much as the early majority do have a good collaboration and interaction with other members of the social system, they lack the leadership role that the early adopters enjoy. The early majority adopt the innovation just before the other half of their peers have adopted it. They are deliberate in adopting the innovation and they are neither the first ones nor the last ones to adopt it. The innovation decision takes more time to be reached than it is with the innovators and the early adopters.

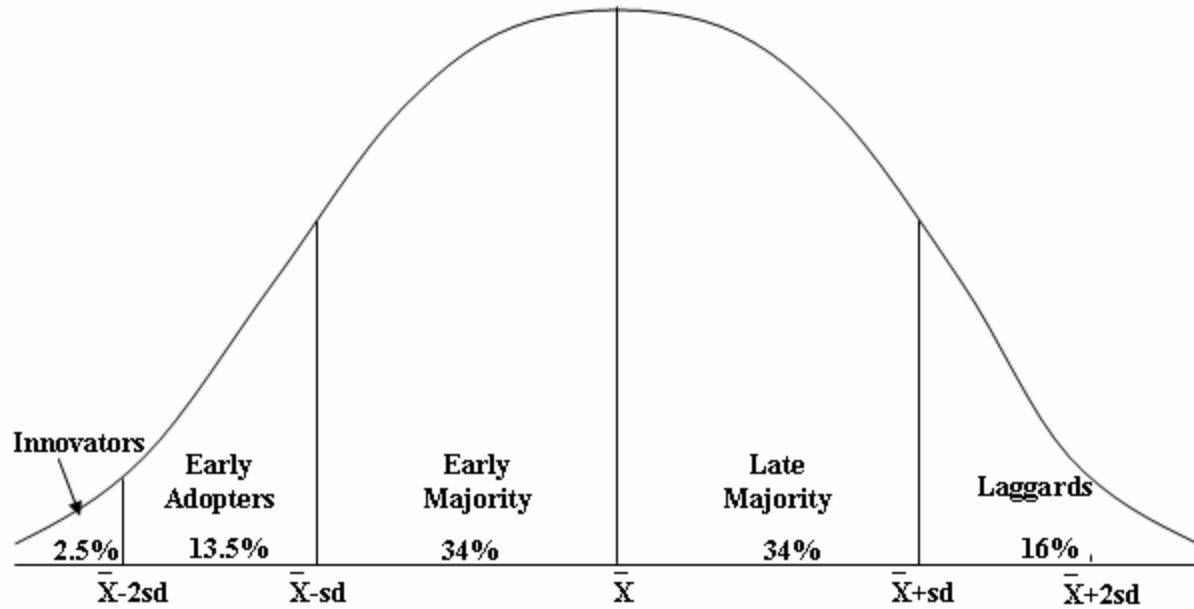
Late Majority

Rogers (2003) postulates that the late majority usually carries one third of all the members of the social system who keep waiting until most of their peers have adopted the innovation. These lot of adopters may be skeptical about the innovation and its results economic necessity and the peer pressure may lead to the adoption of the innovation. Through the close peers' interpersonal networks, the uncertainty of the innovation reduces because the peers tend to persuade them. Then "the late majority feel that it is sage to adopt" p. (284).

Laggards

According to Rogers (2003) laggards tend to have the tradition view and are more skeptical about innovators and change agents than the late majority. Being the most localized group of the social system, their interpersonal networks largely entails of other members of the social system from the same category. They lack leadership role and because the limited resources and lack of the awareness knowledge of innovations, they first want to ensure that the innovation works before they adopt it. The innovation decision tends to take longer than the other categories because of the waiting and checking with other adopters on the success of the innovation before they decide to adopt it.

The details of the attributes are clearly shown in the Figure 1 below



A Model of Five Stages in the Innovation-Decision Process (Source: Diffusion of Innovations, Fifth Edition by Everett M. Rogers. Copyright (c) 2003 by The Free Press. Reprinted with permission of the Free Press: A Division of Simon & Schuster.)

3.1 RESEARCH METHODOLOGY

The study used a quantitative approach seeking to understand the organization in depth both contextually and holistically. This approach attracted a collection of deeper information that eventually provided an understanding of the obstacles of diffusion of innovations in Dar Al Fouad Hospital. The population of the study consisted of all the regular employees of Dar Al Fouad Hospital. This was considered as the population of the study. Data was collected using a questionnaire on a 5 point Likert scale. This was arrived at due to the time consideration since the questionnaire collects data quite quickly. All participants were given the opportunity to provide feedback, and feedback was generally anonymous which encouraged openness and honesty. The structured questionnaire data was easily processed by SPSS. This study collected primary data through a structured questionnaire in which a Likert 5 scale was used. Personal administration of the questionnaires was used to administer the questionnaires to all the respondents.

4.1 RESULTS AND DISCUSSIONS

4.1.1 Descriptive on Knowledgeability

The respondents were asked to indicate how knowledgeability had contributed to diffusion of innovation in the Dar Al Fouad Hospital and their responses compiled in Table 1.

Table 1: Knowledgeability

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD
I use individual communication innovations (such as e-mails) to communicate with other practitioners of my line of duty inside or outside my organization	12.10	6.10	36.40	21.20	24.20	3.39	1.27
I use individual communication innovations (such as e-mails or web conferences) to communicate with a variety of individuals outside of my organization (such as media, government agencies, grass roots organizations, or lobbyists.)	11.10	5.10	24.20	27.30	32.30	3.98	1.32
I use interpersonal communication innovations (such as video conference calls involving face-to-face exchanges) to communicate with others such as offsite employees, clients or business partners.	22.20	9.10	19.20	26.20	23.20	3.83	1.49
Average						3.73	1.36

Results in Table 1 shows that, 45.40 %(21.20+24.20) of the respondents agreed that they were using individual communication innovations (such as e-mails) to communicate with other practitioners of their line of duty inside or outside their organization, while another 18.20% of the respondents disagreed with the statement. The results further indicate that majority of the respondents (59.60%) agreed that they were using individual communication innovations (such as e-mails or web conferences) to communicate with a variety of individuals outside of their organization (such as media, government agencies, grass roots organizations, or lobbyists.), while 16.20% of the respondents disagreed. Also the respondents were asked to indicate whether they were using interpersonal communication innovations (such as video conference calls involving face-to-face exchanges) to communicate with others such as offsite employees, clients or business partners, 49.40% agreed while 31.30 disagreed the rest were neutral about the statement. The results had an average mean of 3.73 indicating that majority of the respondents agreed to the three statements, however the responses were varied as indicated by an average standard deviation of 1.36. these results are in agreement with the findings of Rogers (2003) who indicated that the knowledge stage is the first stage of the innovation decision process. In this stage, individuals learn about the actual presence of an innovation and further seek out more information about it.

4.1.2 Descriptive on Organizational Innovation Capability.

The respondents were asked to give their opinion on the innovation capability of their organization; their responses were as in Table 2.

Table 2: Capability

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD
I am venturesome and eager to be the first to try new innovations	10.10	4.10	33.30	32.30	20.20	3.36	1.22
I adopt innovations and influence others to do so.	9.10	9.10	21.20	27.20	33.30	3.61	1.34
I am willing to follow the lead of others in adopting innovations	8.10	6.10	30.30	31.30	24.20	3.39	1.25
I need to be convinced of the advantage of innovations by peers	12.10	4.10	15.20	45.50	23.20	3.58	1.25
I am suspicious of innovations	11.10	7.10	18.20	45.50	18.20	3.52	1.23
I am always looking for innovations	5.10	6.40	10.20	37.00	41.40	3.73	1.35
My opinion about innovations is respected by peers	10.40	8.10	13.20	26.20	42.10	3.79	1.39
I go along with innovations out of necessity	12.00	6.50	30.10	30.30	21.20	3.42	1.25
Innovations I use have a relative advantage and are better than what I used before.	24.20	2.10	17.20	22.20	34.20	3.12	1.54
The innovations I use are consistent with my existing values and needs	12.10	6.10	18.20	39.40	24.20	3.58	1.28
Average						3.51	1.31

From the results in table 2, it is clear that 52.50% of the respondents agreed that they were venturesome and eager to be the first to try new innovations, while 14.20% disagreed, 60.50% of the respondents agreed that they adopted innovations and influenced others to do so but another 18.20% disagreed. Concerning whether the respondents were willing to follow the lead of others in adopting innovations, 55.50% agreed while 14.20% disagreed with the statement. 68.70% of the respondents agreed that they needed to be convinced of the advantage of innovations by peers, while 16.20% disagreed. Majority of the respondents indicated that they were suspicious of innovations, while another 18.20% disagreed about being suspicious of innovations. As to whether the respondents were always looking innovations, 78.40% agreed they did while only 11.50%

disagreed. Further based on the results majority of the respondents agreed that innovations they were using were consistent with their existing values and needs. Generally the results had an average mean of 3.51 indicating that the respondents agreed with most of the statements however the responses were varied as indicted by standard deviation of 1.31. the results are consistent with the findings of Rogers (2003) which indicated that, when an innovation is compatible with a person's needs, then uncertainty will decrease and the rate of adoption of that innovation will increase. Therefore, even the aspect of naming the innovation is a very significant part of compatibility.

4.1.3 Descriptive on Innovation Implementation Barrier.

The respondents were asked to indicate some of the barriers to innovation implementation. Their responses were as recorded in table 3.

Table 3: Barrier

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD
I am resistant to change	9.10	39.30	24.20	27.40	0.00	2.94	1.03
I will adopt innovations but do not attempt to influence others to do so	39.40	15.20	27.30	18.20	0.00	2.24	1.17
Innovations are difficult and complex to learn	21.20	21.20	24.20	33.30	0.00	2.70	1.16
I need more time to experiment with innovations before they are implemented	33.30	15.20	27.30	24.20	0.00	2.42	1.20
I need to be convinced of the advantage of innovations by peers	21.20	33.30	24.20	21.20	0.00	2.45	1.06
Average						2.55	1.12

Based on the results in Table 3, majority of the respondents (48.40%) disagreed with the statement that they were resistant to change, while 27.40% agreed that they were resistant to change. 54.60% of the respondents disagreed with the statement that they would adopt innovations but do not attempt to influence others to do so, but another 18.20% agreed with the statement. Concerning difficulty and complexity of innovation, majority (33.30%) agreed that Innovations were difficult

and complex to learn while 42.40% disagreed. When asked to indicate whether they needed more time to experiment with innovations before they are implemented or not, 48.50% of the respondents disagreed while only 24.00% agreed. Finally, 54.50% of the respondents disagreed about the fact that they needed to be convinced of the advantage of innovations by peers, while another 21.20% agreed with the statement. Generally the results had an average mean of 2.55 indicating that the respondents disagreed with most of the statements but the responses were varied as supported by an average standard deviation of 1.12. These results are consistent with the conclusion made by Rogers (2003) that, the late majority usually carries one third of all the members of the social system who keep waiting until most of their peers have adopted the innovation. This lot of adopters may be skeptical about the innovation and its results economic necessity and the peer pressure may lead to the adoption of the innovation.

4.1.4 Descriptive on Diffusion in Innovation

Finally, the results in Table 4 show the respondents views on diffusion in innovation.

Table 4: Diffusion

Statement	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Mean	SD
Adoption of innovations in our organization has improved efficiency	12.10	6.30	21.00	21.20	39.40	3.70	1.38
The results of using innovations are visible to others in my organization	10.10	5.10	17.20	39.40	28.30	3.61	1.30
The results of using innovations are visible to others outside of my organization (e.g., clients or contacts).	9.10	4.10	18.20	32.30	36.30	3.67	1.34
Using innovations has enhanced my image or status at work	11.10	7.10	27.30	21.20	33.30	3.58	1.35
Average						3.64	1.34

Results in Table 4 shows that majority of the respondents (60.60%) agreed with the statement that adoption of innovations in their organization had improved efficiency, while only 18.40% disagreed. Also 67.70% of the respondents agreed that the results of using innovations were visible to others in there organization while another 15.20% of the respondents did not agree with the statement. The results further show that 68.60% of the respondents believed that the results of using innovations were visible to others outside of their organization (e.g., clients or contacts), but on the other side 13.20% of the respondents disagreed. Finally as to whether using innovations had enhanced the image or status of the respondents at work or not, 54.50% agreed while 18.20% disagreed. The results had an overall mean of 3.64 and a standard deviation of 1.34 implying that respondents agreed with most of the statements but the responses were varied. The results concur with the findings of Dearing (2009) which indicated that “diffusion studies have demonstrated a mathematically consistent sigmoid pattern (the S-shaped curve) of over time adoption for innovations that are perceived to be consequential by potential adopters, when the decisions to adopt are voluntary, and with attendant logically-related prepositions, qualifying this literature as a theory of social change” .

4.2 Correlation Analysis

Table 5 below presents the results of the correlation analysis.

Table 5: Correlation Matrix

		Diffusion	Knowledgeability	Capability	Barriers
Diffusion	Pearson				
	Correlation	1.000			
	Sig. (2-tailed)				
Knowledgeability	Pearson				
	Correlation	.725**	1.000		
	Sig. (2-tailed)	0.000			
Capability	Pearson				
	Correlation	.600**	.521**	1.000	
	Sig. (2-tailed)	0.000	0.000		
Barriers	Pearson				
	Correlation	-.402**	-.415**	-.455**	1.000
	Sig. (2-tailed)	0.021	0.016	0.008	

The results in Table 5 revealed that knowledgeability and prevention and diffusion in innovation are positively and significantly associated ($r=0.725$, $p=0.000$), the table further indicated organizational innovation capability and diffusion in innovation are positively and significantly

associated ($r=0.600$, $p=0.000$). The results further showed that new innovation implementation barriers and diffusion in innovation were negatively and significantly associated ($r=-0.402$, $p=0.021$). This implies that an improvement in knowledgeability, organizational innovation capability and reduction in implementation barriers leads to an improvement in diffusion in innovation. The correlation analysis results are consistent with the findings of According to Gigerenzer and Selten (2001) who indicated that diffusion will occur a combination of three elements that are very crucial in this process; a) there is a serious need for an individual to decrease personal uncertainty the moment this new innovation is presented to him/her, b) there is a dire need for an individual to react to his/her perceptions of what exactly other credible people are thinking and doing, and c) the general felt social pressure to do as others have done

4.3 Regression Analysis

The results presented in Table 6 present the fitness of model used of the regression model in explaining the study phenomena.

Table 6: Model Fitness

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.771 ^a	.595	.553	.31450

a. Predictors: (Constant), Barriers, Capability, Knowledgeability.

From the results on Table 6, Barriers, Capability and knowledgeability were found to be satisfactory variables in explaining diffusion in innovation at Dar Al Fouad Hospital. This fact is supported by coefficient of determination R square of .595. This means that Barriers, Capability and knowledgeability explain 59.5% of the variations in the dependent variable, which is diffusion in innovation. In statistics, significance testing the p-value indicates the level of relation of the independent variable to the dependent variable. If the significance number found were less than the critical value also known as the probability value (p) which is statistically set at 0.05, then the conclusion would be that the model is significant in explaining the relationship; else, the model would be regarded as non-significant.

Table 7 gives the outcomes on the examination of the difference (ANOVA).

Table 7: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.208	3	1.403	14.181	.000 ^b
Residual	2.868	29	.099		
Total	7.076	32			

a. Dependent Variable: Diffusion

b. Predictors: (Constant), Knowledgeability, Capability, Barriers.

The outcomes of the analysis of variance show that the general model was statistically significant. Further, the outcomes suggest that knowledgeability; Capability and Barriers are good indicators of diffusion in innovation. This was supported by an F statistic of 14.181 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 8: Regression of Coefficient

Model	Unstandardized Coefficients		Standardized t Coefficients		Sig.
	B	Std. Error	Beta		
(Constant)	2.712	.335		8.102	.000
Knowledgeability	.232	.059	.557	3.907	.001
Capability	.112	.056	.293	2.014	.043
Innovation Implementation Barriers	-.018	.066	-.037	-.274	.036

a. Dependent Variable: Diffusion

Regression of coefficients results in Table 8 shows that Knowledgeability and Diffusion are positively and significant related ($r=.232$, $p=0.001$). The table also indicated that capability and prevention and diffusion are positively and significantly related ($r=.112$, $p=0.043$). However, results showed that barriers and diffusion were negatively and significantly related ($r=-0.018$, $p=0.036$). This implies that an improvement in knowledgeability, organizational innovation capability and reduction in implementation barriers leads to an improvement in diffusion in innovation.

4.4 Hypotheses Testing Between Knowledgeability, Capability, Barriers and Diffusion

The hypothesis of the study was that knowledgeability, capability and barriers had no statistical significant effect on diffusion in innovation at healthy living hospital. Simple linear regression was used to test the hypotheses and determined using p-value (Table 8). The acceptance/rejection criteria was that , if the $p\text{-value} < 0.05$, then the null hypothesis H_0 is rejected, but if $p\text{-value} > 0.05$, the null hypothesis is not rejected.

The first hypothesis was that, Knowledgeability has no statistical significant effect on diffusion in innovation. Results in table 8 shows that the p-value was 0.001 this was supported by calculated t-statistic of 3.907 which was larger than the critical t-statistic of 1.96. The null hypothesis was therefore rejected and the alternative hypothesis was adopted that knowledgeability had effect on diffusion in innovation in Dar Al Fouad Hospital. Similarly, the second hypothesis was that organizational innovation capability had no statistical significant effect on diffusion in innovation in Dar Al Fouad Hospital. Results in table 8 shows that the p-value was 0.043 this was supported by calculated t-statistic of 2.014 which was larger than the critical t-statistic of 1.96. The null hypothesis was therefore rejected and the alternative hypothesis was adopted that organizational capability had effect on diffusion in innovation in Dar Al Fouad Hospital. Finally, the third hypothesis was that new innovation implementation barriers had no statistical significant effect on diffusion in innovation in Dar Al Fouad Hospital. Results in table 8 shows that the p-value was 0.036 this was supported by calculated t-statistic of -0.274 which was larger than the critical t-statistic of -1.96. The null hypothesis was therefore rejected and the alternative hypothesis was adopted that new innovation implementation barriers had effect on diffusion in innovation in Dar Al Fouad Hospital.

4.5 Discussion of the Findings

The general objective of this study was to establish the obstacles of diffusion of innovations in Dar Al Fouad Hospital. Specifically, the study sought to establish the effect of knowledgeability, organizational innovation capability and new innovation implementation barriers on diffusion in innovation. Making inferences to the findings of the study, it emerged that most respondents agreed that Knowledgeability, capability and barriers had effect on diffusion in innovation in Dar Al Fouad Hospital. Regression of coefficients results indicated that Knowledgeability and Diffusion are positively and significant related ($r=0.232$, $p=0.001$). The results also indicated that

capability and prevention and diffusion are positively and significantly related ($r=.112$, $p=0.043$). However, results showed that barriers and diffusion were negatively and significantly related ($r=-0.018$, $p=0.036$). Correlation analysis results indicated that knowledgeability and prevention and diffusion in innovation were positively and significantly associated ($r=0.725$, $p=0.000$), the results further indicated that organizational innovation capability and diffusion in innovation were positively and significantly associated ($r=0.600$, $p=0.000$). However, the results showed that new innovation implementation barriers and diffusion in innovation were negatively and significantly associated ($r=-0.402$, $p=0.021$).

5.1 CONCLUSIONS

Based on the study findings, it can conclude that, knowledgeability, organizational innovation capability and new innovation implementation barriers are some of the major factors affecting diffusion in innovation in Dar Al Fouad Hospital. Concerning knowledgeability, the study findings indicated that use of individual communication innovations (such as e-mails) to communicate with other practitioners, use of individual communication innovations (such as e-mails or web conferences) to communicate with a variety of individuals outside Dar Al Fouad Hospital (such as media, government agencies, grass roots organizations, or lobbyists.) and use of interpersonal communication innovations (such as video conference calls involving face-to-face exchanges) to communicate with others such as offsite employees, clients or business partners, influenced diffusion in innovation at Dar Al Fouad Hospital. As far as organizational innovation capability is concerned, it can be concluded that majority of the employees at Dar Al Fouad Hospital had innovation implementation capability. Conclusion can be made further that some employees at better living are still resistant to change and others believe they can adopt innovations but cannot attempt to influence others to do so.

Based on the correlation analysis results, it can be concluded that knowledgeability and organizational innovation capability are positively and significantly associated with diffusion in innovation at Dar Al Fouad Hospital, however, new innovation implementation barriers and diffusion in innovation are negatively but significantly associated. Finally, based on the regression analysis results it can be concluded that, that knowledgeability and organizational innovation capability are positively and significantly related to diffusion in innovation at Dar Al Fouad Hospital, however, new innovation implementation barriers and diffusion in innovation are

negatively but significantly related. The conclusions are consistent with the conclusion made by Rogers (2003) that the innovation decision process is described as “an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation.

6.1 RECOMMENDATIONS

From the findings of the study it can be recommended that the management of Dar Al Fouad Hospital should encourage their employees to adopt various communication strategies as a way of enhancing diffusion in innovation in their Hospital. The hospital management should also assess the innovation capability of their employees and encourage them to embrace innovation as one way of improving diffusion in innovation in the hospital. Finally, Dar Al Fouad Hospital management should educate their employees on the importance of innovation so as to break the negativity in them concerning innovation and instead embrace innovation.

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