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A Survey on the Affecting Factors of the Users' Resistance to the Adoption and the Use of the Sydonia System in Public Institutions in D.R. Congo

Dieudonné Yav Muchail¹

Département d'Informatique de Gestion
Institut Supérieur de Statistique
Lubumbashi, Democratic Republic of the Congo

Maloba Mbuya Firmin²

Département d'Informatique de Gestion
Institut Supérieur de Statistique
Lubumbashi, Democratic Republic of the Congo

Raphael Kanyembo Lwimba³

Département de Statistique
Institut Supérieur de Statistique
Lubumbashi, Democratic Republic of the Congo

Patrick Mbewew Katshil⁴

Commissariat Général à l'Énergie Atomique
Lubumbashi, Democratic Republic of the Congo

Alain Kabay Moj⁵

Département des Sciences Commerciales et Financières
Institut Supérieur de Statistique
Lubumbashi, Democratic Republic of the Congo

Chatty Mwadi Muteba⁶

Département des Sciences Commerciales et Financières
Institut Supérieur de Statistique
Lubumbashi, Democratic Republic of the Congo

Jean Mwanza Kasongo⁷

Département de Démographie Appliquée
Institut Supérieur de Statistique
Lubumbashi, Democratic Republic of the Congo

Abstract: According to explanatory theories in the field of information systems, the adoption and the use of Information and Communication Technologies (ICT) in public administration sometimes encounters resistance by users. The intention of resistance and the actual resistance are influenced by a set of technological, organizational, and individual factors; therefore, the extent to which such behaviors may be observed varies depending on the technology in question, the organization, and the users of the technology in the organization. This study focuses on the Sydonia World System, a software system for customs management widely used in the Democratic Republic of the Congo (D.R. Congo) and other countries in Africa on a mandatory basis. The study identifies the affecting factors of the user resistance to the adoption and the use of that technology through a questionnaire-based survey. The results of the survey, which agree with the existing theories, reveal that user resistance is influenced by the following factors: the anxiety toward the technology, the computer literacy of the user, the motivation of the user to use the technology, the complexity of the technology, the relative advantage of the technology perceived by the user, and the compatibility of the technology with existing systems. Due to the specific characteristics of the public administration the D.R. Congo shares with many other developing countries (low level of IT literacy, corruption, the myth of the magic powers of computers to see everything and to unveil secrets and actions of the users, the myth of job-killing-computers, etc.), the study introduced a new individual factor, the relative disadvantage of the technology perceived by the user, which was not included in the existing theoretical models. The results confirm the hypothesis that this factor as well negatively affects the adoption and the use of the technology.

Keywords: ICT Adoption, User resistance, Resistance factor, Sydonia World, Public institution, D.R. Congo.

I. INTRODUCTION

The advances in ICT (Information and Communication Technologies) in the last decades have led many companies and public institutions to build ICT-centered work strategies. Computer systems, computer networks, and software systems are now a part of the everyday life at work. Many studies cited in Ayadi et Daoud (2014) have underlined the benefits of ICT in organizations. As a consequence, organizations invest important part of their budgets in ICT and heavily rely on these technologies to improve their performance or to become more competitive on the market.

However, the adoption and the effective use of ICT sometimes encounter resistance from their intended users. In fact, introduction of ICTs inherently modifies working practices and habits (Jiang et al., 2000). These modifications are not always welcomed in organizations (Ayadi et Daoud, 2014) because in many cases, changes are often perceived as perturbation (Wulf, 1999). Therefore, intentions and behaviors relating to resistance are inevitable.

In the literature, the resistance is mainly defined as the negative attitude of the users toward the adoption and the use of ICT (Ferney and Sobreperez, 2006). Intentions and behaviors relating to resistance have a negative impact on the development of organizations. For instance, according to Joshi (2005), they may hinder the technological projects initiated by organizations.

The goal of this study is to identify the factors affecting the users resistance to the adoption and the use of the Sydonia World System, a software system widely used for customs management in the D.R. Congo on a mandatory basis. Sydonia World System is a set of client/server software modules for customs management and operations tracking.

The results of the study shall contribute to our understanding of the users' attitude towards the studied technology and help the customs administration to take informed decisions.

II. THE ORETICAL FRAMEWORK AND RELATED WORK

The literature describes many explanatory theories of the phenomenon of the resistance to the adoption and the use of ICT. One of the most referenced theoretical model of the literature was elaborated by Joshi (1991) to explain the individual resistance to the adoption and the use of ICT. This model shows that the users evaluate the adoption of ICT in their organizations at three levels: "individual", "individual-employer", and "individual-other users". According to Joshi (1991) as well as Rosen and Weil (1995), Setzekorn et al. (2002), and Yang et al. (2007), the resistance is affected by individual factors such as the age, the level of instruction, anxiety toward the technology, etc. Joshi's model is completed by Markus (1983), Treister (1998), Zwick (2002), Leonard (2004), and Lapointe and Rivard (2005) who add the technological factors, that is the own characteristics of the technology such as the functionality, or the complexity of use. The third group of researchers introduce a third set of factors, the organizational factors which include, for example, the training offered to the users on the technology (Autissier, 2000).

For completeness, we propose, here, to explain the phenomenon of resistance to the adoption and the use of ICT including individual, organizational, and technological factors (d'Auteuil & Bonneau, 2003; DISIC, 2013).

The table below gives an overview of the most agreed factors. The references in the literature are provided in the paper by Ayadi and Daoud (2004).

TABLE I Overview of the most agreed factors of resistance to ICT adoption and use

| Category | Factor | Notes |
|--------------------|-------------------------------|---|
| Individual factors | Age | The age of the user. Older the user, greater the resistance. |
| | Anxiety toward the technology | Anxiety is a psychological state of the individual. It is defined as the fear of the use the technology. It may positively affect the resistance of the individuals toward the use of the technology. |
| | Motivation | Motivation is a psychological process which activates, directs and maintain the behavior of the individuals in the realization of goals. The motivation to use ICT negatively affects the resistance. |
| | Mastery of the computer tools | It represents the set of previous knowledge, skills and experience in the use of |

| | | |
|------------------------|---------------------------------|--|
| | | common computer hardware and software. The master of the computer tools negatively affects the resistance. |
| Technological factors | Perceived complexity | Complexity is defined as the difficulty to understand and to use a technology. The perceived complexity of the technology positively affects the resistance. However, with a continuing support of experts, if available, the influence of this factor on resistance may be reduced. |
| | Perceived compatibility | This factor refers to the extent to which the use of the ICT is considered suited to the needs of the users. The perceived compatibility negatively affects the resistance. |
| | Perceived relative advantage | It refers to the fact that a technology may be perceived as offering many advantages (e.g. time or effort reduction). This factor negatively affects the resistance. |
| | Perceived reliability | This factor refers to the perception that a technology is reliable, dependable, or trustworthy almost every time it is used. The perceived reliability negatively affects the resistance. |
| Organizational factors | Support from the administration | This factor refers to the support that the authorities of the organization provides to the users of the technology. This factor negatively affects the resistance. |
| | Training | Training of the users on the technology negatively affects the resistance. |
| | Communication | Communication on the technology. This factor negatively affects the resistance. |

Due to the specific characteristics of the public administration the D.R. Congo shares with many other developing countries (low level of IT literacy, corruption, the myth of the magic powers of computers to see everything and to unveil secrets and actions of the users, the myth of job-killing-computers, etc.), the study introduced a new individual factor, the relative disadvantage of the technology perceived by the user, which is not included in the existing theoretical models. We hypothesize this factor positively affects the resistance of the users to the adoption and the use the Sydonia World system.

III. METHODOLOGY

The research methodology follows a hypothetical-deductive approach, using quantitative data collected through a survey (see Loubet de Bayle (2000) and Durkheim (1990) for details about the approach).

Data was collected using a multiple choice questionnaire administrated to a sample of the users of the Sydonia World system. The questionnaire was given to each person individually, in isolation, and on a voluntary basis. That way, each respondent could answer away from the influence of the authorities and the other respondents. The questionnaire was elaborated based on models of factors of ICT adoption and use published in the literature. Every questionnaire item was measured using a five-level Likert-type scale (1. Strongly disagree, 2. Disagree, 3. Neither agree nor disagree, 4. Agree, 5. Strongly agree).

Data has been analyzed using statistical methods. The study developed and tested a model of variance between a set of factors and the resistance to the adoption and the use of the Sydonia World system.

The Lubumbashi Branch office of the DGDA (Direction Générale des Douanes et Accises) was chosen as the study field. The targeted population included customs officers and IT officers. Individual employee was retained as the unit of analysis.

The survey lasted 3 months. The questionnaire was submitted to 50 people of which 47 responded. However, 5 forms have been discarded because of mistakes. Finally, the analysis included only 42 respondents.

IV. RESULTS AND DISCUSSION

The sample is drawn from a general population of users of the Sydonia World system at DGDA/Lubumbashi. It consists of a mix of Male and Female people, several age brackets ranging from under 25 to over 50 years, various levels of studies dealing with various administrative positions, with different experiences or seniority in the company. We therefore retain the following descriptive variables: Age of the respondent, Gender of the respondent, Education of the respondent, Position of the respondent, Experience or seniority of the respondent, and Number of respondents per service. These variables allow us to bring out a descriptive analysis of the sample after few descriptive statistics performed in terms of percentage.

Here is the table that summarizes with clarity the main results of the descriptive analysis and descriptive statistics performed:

TABLE II Descriptive analysis of the sample

| Variables | Statistics |
|---------------------------------------|---|
| Age of the respondent | 7 % Less than 25 years 55 % between 26 and 35 years 20 % between 36 and 50 years 18 % more than 50 years |
| Gender of the respondent | 72 % Males 28 % Females |
| Level of education of the respondent | 37 % undergraduates 61 % graduates 02 % postgraduates + |
| Position of the respondent | 10,7 % CEO 78.6 % Administrative Officers 10,7 % IT Officers |
| Experience or seniority of respondent | 18 % less than 5 years 68 % [5- 10 years [] 14 % [10- and more |
| Number of respondents per service | CEO: 3 respondents Administrative Officers: 22 respondents IT Officers: 3 respondents |

The table 3 below shows the results of the principal component analysis of the factors. It shows that the analysis renders a single factor for almost all variables explains more than 50% of the total variance, with positive contributions and factor above 0.5. In particular, the perceived relative disadvantage of the Sydonia World system has an explanation rate of the total variance greater than 74%. Only variables relating to the control of SYDONIA and training on SYDONIA have a reliability problem, we neglect since they do not relate to the main factor studied.

TABLE III Results of the principal component analysis of the factors

| Component variables | | Convergent validity | | |
|--|-------------|-------------------------|------------------------|--------------------|
| Variables | Items codes | Factorial contributions | Quality representation | Variance explained |
| Anxiety toward Sydonia | Anx1 | 0,881 | 0,776 | 77,851 % |
| | Anx2 | 0,944 | 0,891 | |
| | Anx3 | 0,817 | 0,668 | |
| Motivation for Sydonia | Motv1 | 0,910 | 0,828 | 84,452 % |
| | Motv2 | 0,940 | 0,884 | |
| | Motv3 | 0,907 | 0,822 | |
| Mastering Sydonia | Mtr1 | 0,801 | 0,641 | 47,299 % |
| | Mtr2 | 0,584 | 0,341 | |
| | Mtr3 | 0,661 | 0,437 | |
| Perceived relative disadvantage of Sydonia | Dsv1 | 0,844 | 0,712 | 74,611 % |
| | Dsv2 | 0,830 | 0,689 | |
| | Dsv3 | 0,915 | 0,838 | |
| Perceived complexity of Sydonia | Cplx1 | 0,849 | 0,721 | 52,791 % |
| | Cplx2 | 0,867 | 0,752 | |
| | Cplx3 | 0,333 | 0,111 | |
| Perceived relative advantage of Sydonia | Avtg1 | 0,925 | 0,856 | 85,572 % |
| | Avtg2 | 0,925 | 0,856 | |
| Perceived compatibility of Sydonia | Cmpt1 | 0,876 | 0,768 | 76,814 % |
| | Cmpt2 | 0,976 | 0,768 | |
| Training on Sydonia | Frmt1 | 0,712 | 0,507 | 46,488 % |
| | Frmt2 | 0,685 | 0,470 | |
| | Frmt3 | -0,646 | 0,417 | |
| Communication on Sydonia | Com1 | 0,904 | 0,817 | 81,668 % |
| | Com2 | 0,904 | 0,817 | |
| Resistance to the adoption of Sydonia | Res1 | 0,938 | 0,881 | 61,142 % |
| | Res2 | 0,877 | 0,770 | |
| | Res3 | -0,429 | 0,184 | |

Reliability or accuracy of the scales (or internal consistency) was measured by Cronbach Alpha indicator. The literature suggests that this indicator should have a value of at least 0.70 for acceptable confidence.

The following table shows the values of Cronbach's alpha for all variables. A number of explanatory variables except "training" have a value of the Alpha Cronbach indicator very satisfied, well above 0.70, the variable "relative perceived disadvantage" being among the highest, more than 0.80.

TABLE IV Cronbach Alpha Indicator Variables

| Variable | Number of items | Alpha of Cronbach | Observation |
|--|-----------------|-------------------|---|
| Anxiety towards Sydonia | 3 | 0,854 | Well above the reference value 0.70 |
| Mastering Sydonia | 3 | 0,907 | Well above the reference value 0.70 |
| Motivation for using Sydonia | 3 | 0,423 | Well above the reference value 0.70 |
| Perceived relative disadvantage of Sydonia | 5 | 0,809 | Well above the reference value 0.70 |
| Perceived complexity of Sydonia | 3 | 0,515 | Well below the reference value 0.70 |
| Perceived relative advantage of Sydonia | 3 | 0,830 | Well above the reference value 0.70 |
| Perceived compatibility of Sydonia | 2 | 0,698 | Well above the reference value 0.70 |
| Training in the use of Sydonia | 3 | -0,195 | The value is negative due to a negative average covariance among the elements. Therefore, the assumptions of reliability model are not met. |
| Communication on Sydonia | 2 | 0,775 | Well above the reference value 0.70 |
| The resistance to the adoption of Sydonia | 3 | 0,350 | Well below the reference value 0.70 |

In terms of testing hypotheses, we carried out tests of the single hypothesis of the added variable in all dependent variables that have already been investigated further. This is the variable "perceived relative disadvantage of Sydonia". The latter will be measured at the only independent variable "Resistance" in order to determine our outcome. We'll keep our discussion on the corresponding assumption at disadvantage compared to the results obtained.

After processing the collected data, here below contingency tables of the variable "Perceived relative disadvantage" against the independent variable "Resistance" and each table concluded with a synthesis expressing the percentage distributions significant matches.

TABLE V 1st Correspondence Table: Cross Reference DSV1 & RES1

| Benefits earned at other times | Acceptability of adding the same type of software DGDA | | | | | |
|--------------------------------|--|---------------------|-----------------|-------------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention of resistance | Absence of resistance | Active margin |
| Not agree at all | 5 | 1 | 3 | 8 | 3 | 20 |
| Disagree | 0 | 1 | 2 | 2 | 0 | 5 |
| Neither agree nor disagree | 1 | 1 | 0 | 0 | 1 | 3 |
| Agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 6 | 3 | 5 | 10 | 4 | 28 |

TABLE VI Acceptability of adding the same type of software at DGDA and benefits earned at other times

| | | |
|------------------------|----|-----|
| Positive influence | 17 | 61% |
| Influence undetermined | 8 | 29% |
| Negative influence | 3 | 11% |

Our hypothesis about the disadvantage is that "The perceived relative disadvantage has a positive impact on user resistance to the adoption and the use of the Sydonia World system". We see in the first table of correspondence a high rate of users (61%) has a positive influence on the strength of this hand Dsv1 (Gain by other circuits time), another representative number of users (29%), the latter this disadvantage (Dsv1) has an unknown impact and only 11% do not share this opinion, so this disadvantage (Dsv1) for this 11% does not influence their resistance. And note that all this is measured facing their behavior displayed

through the first resistance factor (Res1) of the independent variable (added acceptability of the same type of software to the LDB).

Users express a refusal to adding another type of Sydonia-like software. Hence we can say that this form of disadvantage (Dsv1) very positively influences the users' resistance to the acceptance and the use of Sydonia World.

TABLE VII 2nd Correspondance Table: Cross Reference DSV1 & RES2

| Benefits earned at other times | Management of all the features of the organization through SYDONIA | | | | | |
|--------------------------------|--|---------------------|-----------------|-------------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention of resistance | Absence of resistance | Active margin |
| Not agree at all | 4 | 4 | 1 | 5 | 6 | 20 |
| Disagree | 0 | 2 | 0 | 3 | 0 | 5 |
| Neither agree nor disagree | 1 | 1 | 0 | 1 | 0 | 3 |
| Agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 5 | 7 | 1 | 9 | 6 | 28 |

TABLE VIII

Management of all the features of the organization through Sydonia and benefits earned at other times

| | | |
|------------------------|----|-----|
| Positive influence | 18 | 64% |
| Influence undetermined | 4 | 14% |
| Negative influence | 6 | 21% |

Always based on the idea of our hypothesis about the disadvantage, we observe in this 2nd table an even higher rate of users (64%) with a positive influence; a rate of 14% of undetermined influence and a rate of 21% with a negative influence share this disadvantage. The measures still agree another observation seen through the second resistance factor (Res2) of the independent variable. Users do not want everything to be managed by Sydonia. So this disadvantage (Dsv1) again very positively affects the users' resistance to the acceptance and the use of Sydonia.

TABLE IX 3rd Correspondance Table: Cross Reference DSV1 & RES3

| Benefits earned at other times | Utility capital at the forefront of control | | | | | |
|--------------------------------|---|---------------------|-----------------|-------------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention of resistance | Absence of resistance | Active margin |
| Not agree at all | 3 | 10 | 2 | 4 | 1 | 20 |
| Disagree | 0 | 0 | 1 | 4 | 0 | 5 |
| Neither agree nor disagree | 1 | 1 | 0 | 0 | 1 | 3 |
| Agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 4 | 11 | 3 | 8 | 2 | 28 |

TABLE X Utility capital at the forefront of control and benefits earned at other times

| | | |
|------------------------|----|-----|
| Positive influence | 21 | 75% |
| Influence undetermined | 6 | 21% |
| Negative influence | 1 | 4% |

We see in this 3rd correlation a high rate of users with positive influence (75%); a rate of 21% of undetermined influence and a rate of 4% with a negative influence share this disadvantage. The measures still agree another observation seen through the third resistance factor (Res3) of the independent variable.

We observe a significantly less effective resistance because many users are convinced by the usefulness of the Sydonia World system. We conclude that the disadvantage factor, Dsv1, very positively influences the resistance of users against the adoption and the use of the Sydonia World system. It can then be validated as a factor of resistance.

TABLE XI 4th Correspondence Table: Cross Reference DSV2 & RES1

| Profits next door (per diem) | Acceptability of adding the same type of software DGDA | | | | | |
|------------------------------|--|---------------------|-----------------|-------------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention of resistance | Absence of resistance | Active margin |
| Not agree at all | 6 | 1 | 2 | 8 | 3 | 20 |
| Disagree | 0 | 0 | 2 | 1 | 1 | 4 |
| Neither agree nor disagree | 0 | 2 | 0 | 0 | 0 | 2 |
| Agree | 0 | 0 | 1 | 1 | 0 | 2 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 6 | 3 | 5 | 10 | 4 | 28 |

TABLE XII Profits next door (per diem) and Acceptability of adding the same type of software at DGDA

| | | |
|------------------------|----|-----|
| Positive influence | 16 | 57% |
| Influence undetermined | 7 | 25% |
| Negative influence | 5 | 18% |

We see in this 4th correlation a relatively high rate of users with positive influence (57%); a rate of 25% of undetermined influence and a rate of 18% with a negative influence share this disadvantage. Users express a refusal to adding another Sydonia-like software because there is no profit nearby. Hence we can say that this form of disadvantage (DSV2) very positively influences the users' resistance to the adoption and the use of the Sydonia World system.

TABLE XIII 5th Correspondence Table: Cross Reference DSV2 & RES2

| Profits next door (per diem) | Management throughout the organization by SYDONIA | | | | | |
|------------------------------|---|---------------------|-----------------|----------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention resistance | Absence of resistance | Active margin |
| Not agree at all | 4 | 4 | 1 | 5 | 6 | 20 |
| Disagree | 0 | 1 | 0 | 3 | 0 | 4 |
| Neither agree nor disagree | 1 | 1 | 0 | 0 | 0 | 2 |
| Agree | 0 | 1 | 0 | 1 | 0 | 2 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 5 | 7 | 1 | 9 | 6 | 28 |

TABLE XIV Profits next door (per diem) and Management throughout the organization by SYDONIA

| | | |
|------------------------|----|-----|
| Positive influence | 17 | 61% |
| Influence undetermined | 3 | 11% |
| Negative influence | 8 | 29% |

We see in this 5th correlation a relatively high rate of users with positive influence (61%); a low rate of 11% of undetermined influence and a rate of 18% with a negative influence share this disadvantage. Users express denial by refusing everything to be managed by Sydonia because there is no benefit of nearby with Sydonia. Hence we can say that this form of disadvantage (DSV2) very positively influences the users resistance to the adoption and the use of the Sydonia World system; this disadvantage doesn't push them to accept the software system.

TABLE XV 6th Correspondence Table: Cross Reference DSV2 & RES3

| Profits next door (per diem) | Utility capital at the forefront of control | | | | | |
|------------------------------|---|---------------------|-----------------|----------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention resistance | Absence of resistance | Active margin |
| Not agree at all | 3 | 9 | 2 | 4 | 2 | 20 |
| Disagree | 1 | 0 | 1 | 2 | 0 | 4 |
| Neither agree nor disagree | 0 | 1 | 0 | 1 | 0 | 2 |
| Agree | 0 | 1 | 0 | 1 | 0 | 2 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 4 | 11 | 3 | 8 | 2 | 28 |

TABLE XVI Profits next door (per diem) and Utility capital at the forefront of control

| | | |
|------------------------|----|-----|
| Positive influence | 19 | 68% |
| Influence undetermined | 5 | 18% |
| Negative influence | 4 | 14% |

We see in this 6th correlation a relatively high rate of users with positive influence (68%); a rate of 18% of undetermined influence and a rate of 14% with a negative influence share this disadvantage. It allows us to conclude that the disadvantage factor, DSV2: Profits next door (per diem), very positively influences the resistance of users against the adoption and the use of Sydonia. The perceived disadvantage can be further validated as a factor of resistance.

TABLE XVII 7th Correspondence Table: Cross Reference DSV3 & RES1

| Contribution to various customers' advice on the advantage of the new SYDONIA system | Acceptability of adding the same type of software at DGDA | | | | | |
|--|---|---------------------|-----------------|-------------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention of resistance | Absence of resistance | Active margin |
| Not agree at all | 5 | 1 | 1 | 4 | 1 | 12 |
| Disagree | 0 | 0 | 1 | 3 | 2 | 6 |
| Neither agree nor disagree | 0 | 1 | 2 | 1 | 0 | 4 |
| Agree | 1 | 1 | 1 | 2 | 1 | 6 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 6 | 3 | 5 | 10 | 4 | 28 |

TABLE XVIII Acceptability of adding the same type of software DGDA and Contribution to various customers' advice on the advantage of the new SYDONIA system

| | | |
|------------------------|----|-----|
| positive influence | 13 | 46% |
| Influence Undetermined | 7 | 25% |
| Negative Influence | 8 | 29% |

We observe in the 7th correlation table a low rate of 46% of positive influence on the resistance, a rate of 25% of undetermined influence, and a rate of 29% a negative influence. Few users express here a refusal to adding another Sydonia-like software because they do not even have an interest in giving advice to different clients on the benefit of the new Sydonia World system.

TABLE XIX 8th Correspondence Table: Cross Reference DSV3 & RES2

| Contribution to various customers' advice on the advantage of the new SYDONIA system | Management throughout the organization by SYDONIA | | | | | |
|--|---|---------------------|-----------------|-------------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention of resistance | Absence of resistance | Active margin |
| Not agree at all | 4 | 2 | 1 | 3 | 2 | 12 |
| Disagree | 0 | 1 | 0 | 2 | 3 | 6 |
| Neither agree nor disagree | 0 | 2 | 0 | 1 | 1 | 4 |

| | | | | | | |
|---------------|---|---|---|---|---|----|
| Agree | 1 | 2 | 0 | 3 | 0 | 6 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 5 | 7 | 1 | 9 | 6 | 28 |

TABLE XX Management throughout the organization by SYDONIA and Contribution to various customers' advice on the advantage of the new SYDONIA system

| | | |
|------------------------|----|-----|
| Positive influence | 12 | 43% |
| Influence undetermined | 5 | 18% |
| Negative influence | 11 | 39% |

We observe in the 8th correlation a low rate (43%) of the users with a positive influence on the strength of this hand DSV3 factor, a rate of 18% of undetermined impact, and a rate of 39% of negative influence. Users express denial, refusing everything to be managed by Sydonia because they do not even take their time they say to be precious to explain to different customers the benefits of the Sydonia World system. But we see that this contribution advice to different clients (DSV3) has not too significant influence, or even a direct impact on the resistance.

TABLE XXI 9th Correspondence Table: Cross Reference DSV3 & RES3

| Contribution to various customers' advice on the advantage of the new SYDONIA system | Utility capital at the forefront of control | | | | | |
|--|---|---------------------|-----------------|-------------------------|-----------------------|---------------|
| | Effective resistance | Moderate resistance | Without opinion | Intention of resistance | Absence of resistance | Active margin |
| Not agree at all | 2 | 6 | 2 | 1 | 1 | 12 |
| Disagree | 1 | 2 | 0 | 3 | 0 | 6 |
| Neither agree nor disagree | 0 | 0 | 1 | 3 | 0 | 4 |
| Agree | 1 | 3 | 0 | 1 | 1 | 6 |
| Totally agree | 0 | 0 | 0 | 0 | 0 | 0 |
| Active margin | 4 | 11 | 3 | 8 | 2 | 28 |

TABLE XXII Contribution to various customers' advice on the advantage of the new SYDONIA system and Utility capital at the forefront of control

| | | |
|------------------------|----|-----|
| positive influence | 15 | 54% |
| Influence Undetermined | 6 | 21% |
| Negative Influence | 7 | 25% |

We observe in this 9th correlation table that a rate exceeding the average number of users (54%) has a positive influence by this factor DSV3, 21% of users have an indefinite influence and 25% have a negative influence on this disadvantage. The sum of both indefinite and negative influences not exceeding the positive. This brings us back to say that there is resistance statistically speaking. That is why it allows us to conclude that the disadvantage factor can influence very positively user resistance.

V. CONCLUSION

This research is part of the efforts to study factors influencing the resistance of users in the adoption and the use of ICT in public institutions in developing countries. The result of the empirical study – a questionnaire-based survey administrated in the Office of Customs Management, Lubumbashi, D.R. Congo – agrees with the existing theories: it reveals that user resistance to the adoption and the use of the Sydonia World system is influenced by many factors. The most important are individual and technological factors. They include: the anxiety toward the Sydonia World system, the computer literacy of the user, the motivation of the user to use the system, the complexity of the system, the relative advantage a use perceived of the system, and the compatibility of the system with existing systems. Organizational factors in terms of training and communication on the Sydonia World system have no influence on the behaviors users. Due to the specific characteristics of the public administration the D.R. Congo shares with many other developing countries (low level of IT literacy, corruption, the myth of the magic powers

of computers to see everything and to unveil secrets and actions of the users, the myth of job-killing-computers, etc.), the study introduced a new individual factor, the relative disadvantage of the technology perceived by the user, which was not included in the existing theoretical models. The results confirm the hypothesis that this factor as well negatively affects the adoption and the use of the Sydonia World system.

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Author(s) Profile



Dieudonné Yav Muchail, received the Bachelor (Hons) degree in Business Informatics from the Higher Institute of Statistics of Lubumbashi (D.R. Congo) and the M.Sc. degree in Computer Science Applied to Geographical Information Systems from the University of Douala (Republic of Cameroon) in 2010 and 2013, respectively. He is currently a postgraduate student in Computer Science at the University of Pretoria (South Africa). His research interests include Software Engineering and Information Systems. Since 2010, he gives lectures and seminars in Desktop and Web Programming, Information systems, and Software engineering at public and private universities and colleges in D.R. Congo; he also develops business software.



Firmin Maloba Mbuya, received the Bachelor (Hons) degree in Business Informatics from the Higher Institute of Statistics of Lubumbashi (D.R. Congo) in 2006. He is currently a postgraduate student in Mathematics and Computer Science at the University of Lubumbashi. His research interests include Computer Networks, Social Security, and Information Technology Applications. Since 2006, he gives lectures and seminars in informatics at public and private universities and colleges in D.R. Congo.



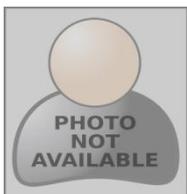
Patrick Mbwebw Katshil, received the Bachelor (Hons) degree in Chemistry from the University of Lubumbashi (D.R. Congo) in 2008. He is currently a research assistant at the Office of Atomic Energy. Since 2008, he gives lectures and seminars in nuclear physics at public universities.



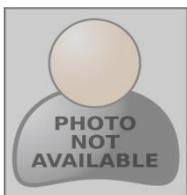
Raphael Kanyembo Lwimba, received the Bachelor (Hons) degree in Statistics from the Higher Institute of Statistics of Lubumbashi (D.R. Congo Congo) in 2008. His research interests include Econometrics and Quantitative Research Methods. Since 2009, he gives lectures in Mathematics and Statistics at public and private universities and colleges in the D.R. Congo.



Alain Kabay Moj, received the Bachelor (Hons) degree in Public Law from the University of Lubumbashi (D.R. Congo) in 2003. He is a lawyer in Lubumbashi Bar, and since 2014, he is the Legal Council of the College of Statistics of Lubumbashi. He also gives lectures and conferences at public and private universities and colleges in D.R. Congo.



Chatty Mwadi Muteba, received the Bachelor (Hons) degree in Public Administration from the University of Lubumbashi (D.R. Congo) in 2012. Since then, she works as administrative officer and also gives lectures in Public Administration at the Higher Institute of Statistics of Lubumbashi.



Jean Mwanza Kasongo, received the Bachelor (Hons) degree in Philosophy from the University of Lubumbashi (D.R. Congo) in 2007. Since then, he gives lectures in Research Methods at the Higher Institute of Statistics of Lubumbashi. His main research interest is Philosophy of science.