Management Information System's Organizational Slack and Its Impact: A Case Study on a Small Business

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ABSTRACT

Management information systems (MIS) is the usage of information systems at the operational, tactical, and strategic levels so that businesses are aided in the achievement of goals. Although the use of MIS is already common, many of its advantages have recently attracted the attention of researchers, especially the phenomenon of slack that businesses frequently like to eliminate. However, recent studies have shown that slack may lead to innovation, which motivates the present study on how organizational slack affected the innovative performance of MMI, a small business. To acquire necessary data, surveys were conducted for this study. To gain further information regarding the factors under inquiry, key informants were interviewed. The results showed that slack affects the innovation of MMI. However, some effects of slacks were positive while some were negative. MMI should invest in "excess resources" or unutilized capacity because doing so will help organizational creativity. MMI's absorbed slack depends on the type of innovation they prioritize. If they target organizational innovation, they should minimize the absorbed slack by keeping track of excess costs. If they aim at promoting strategic innovation, additional investments are needed.

Keywords: Absorbed Slacks, Unabsorbed Slacks, Management Information Systems, Innovation.

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1. INTRODUCTION

1.1 Background

Management information system contributes improve the effectiveness and efficiency of an organization by providing relevant information for sound decision making and helping to make necessary changes in the organization's plans and processes. This is supported by the study of Adonie, Russo, and Dean (2007) that relevant information through the use of MIS can provide recommendation to enhance products and allows the organizations to gain competitive advantage in this fast-changing environment. The effects of MIS can be seen from the perspective of customer service, and financial and operations management of firms. De Queiroz and Olveria (2014) also support this, stating that companies such as clothing retail businesses are searching for such technology that gives them more flexibility and smoothens operations, as well as gives them a competitive advantage over their current and prospective competitors.

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1.2 Rationale

When evaluating the strengths and weaknesses of MIS, one of the weaknesses turned out to be organizational slack. Organizational slack has always been one of the problems that most companies try to minimize. It is defined by Zinn and Flood (2009) as resources that are in excess of the minimum necessary to produce a certain level of organizational output. Slack is something that has been avoided especially by the companies that practice total quality management, six sigma, and just-in-time method because their aim is to keep the "excess" to a minimum so that costs are minimized.

Despite its negative implications, organizational slack may have a positive impact on businesses. Some researchers have shown that organizational slack has proven to be beneficial. Tan and Peng (2003) have pointed out that an inverse-U relationship exists between slack and innovation performance. Google and 3M are also some of the few companies that promote the use of slack in the workplace by encouraging their employees to take 20% of their work week off to be creative and do what they want as projects. This unconventional strategy boosted their number of ideas as well as their company's overall morale; and thus began the slow but sure popularity of using slack as a beneficial tool. Tan and Peng (2003) also mentioned that even though slack is generally viewed as a negative factor, it may be used as something to be relied upon in case of emergencies, such as the need for repairing equipment, sudden change in supply and demand, or changes in the economic environment. Improving employee creativity and other positive effects of organizational slack can lead to new ways to innovate the organization. Various innovative models have been proposed. As companies develop multiple innovations to remain competitive, this would require strategic management rather than a purely functional, marketing and technological vision.

This study determined whether organizational slack is beneficial for companies, especially home improvement companies in the Philippines. Not surprisingly, slack has a negative impact on industries and business owners in the Philippines but using it as an opportunity to innovate can significantly improve organizational performance. The researchers also aim to know how organizational flexibility can help companies in their long-term plans to strengthen their market presence. Ultimately, this study is important because it can help small and medium-scale business owners increase their competitive advantage through a phenomenon that conventional wisdom has told them to eliminate.

The study aims to answer the following question: What are the organizational inefficiencies and their effects arising from the use of the management information system by a small business like MMI? The purpose of this research is to identify organizational slack that MMI's MIS can produce. It provides important information about the organizational slacks that caused by MMI when using their MIS. The results of the study have the following contributions:

Organizational efficiency and effectiveness is something that all companies want to maximize, and with the current rise of MIS in business models, it is important to see the impact of MIS on many things, namely customer satisfaction, operational management and financial investment. Other organizations could easily apply the information gathered from this study to improve their performance and strengthen their market position.

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There have been few empirical studies demonstrating the influence of MIS and there is also little literature in the Philippine context on these topics. This research added to the existing literature will help improve the quality of theses on similar topics, especially in the same field.

2. LITERATURE REVIEW

It is known that organizational slack is influenced by the human desired outcome of efficiency, which is significantly enhanced by technology. This section discusses organizational delays believed to be affected by MIS, a connection that will be discussed comprehensively in the final part of the study. Organizational slack is the cushion of actual or potential resources for an organization that allows them to be more flexible should any unexpected situation occur (Daniel *et al*., 2004). It also helps the organization to make strategic plans without neglecting possible external stimuli.

Organizational slack represents potentially utilizable resources that can be redeployed to achieve the firm's goals (Daniel *et al*., 2004).It can be separated into two categories: (1) absorbed slack, which includes underutilized capacity, and (2) unabsorbed slack, which includes uncommitted cash flows and untapped lines of credit at the moment. By definition, absorbed slack cannot be quickly redeployed, whereas unabsorbed slack is more adaptable and can be. Unabsorbed slack hence permits greater CEO discretion.

Absorbed slack is the type of slack that corresponds to excess amounts of cost in organizations (Tan & Peng, 2003). Compared to other types, absorbed slack is not easy to deploy as it is difficult to recover. Tan and Peng (2003) stated that major repair funds are *"designated for repairs of large equipments, typically has little alternative use other than its designated purpose. This is because in many cases machines are used well after they are fully appreciated, and repair costs are very high"* whereas accounts payable is often used by managers as a way of delaying payments. Chen & Huang (2010) mentions that absorbed slack give individuals necessary things that allow them to be more innovative and creative, such as space, time, and opportunities to test out their ideas and findings. Absorbed slack acts as a safety net for some employees and makes them feel less pressured about their tasks, this in turn promotes a relaxed yet efficient working environment and boosts overall productivity as well as innovation in some cases.

Unabsorbed slack is simple to deploy in contrast to absorbed slack. Although depreciation funds are typically used to meet various unforeseen demands, they were initially intended for capital investments. They argued that "these resources are not tied with current production, and become unabsorbed slack" (Tan & Peng, 2003). The reserve fund is yet another instance of unutilized space. This money has been set aside

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particularly for daily operations. One of the managers' most pliable and adaptable resources is reserve money. Loans are available for optional uses. Sales expenses are seen as the primary source of funding for managers to cover a variety of payments, including potential gifts and occasionally even bribes. Retained earnings are the most powerful type of retained earnings since, like loans, they are subject to a great deal of corporate discretion. Simply put, untapped resources that have not yet been allocated to specific tasks are represented by unabsorbed slack. Capital pools to finance innovations or raise dividends given to shareholders are the most typical examples.

3. FRAMEWORK

Bae and Rhee (2014) also proposed a framework of their own consisting of control and moderating variables, aside from the standard dependent and independent variables as seen in Figure 3.3; their results show two major findings. When the firm size and firm age are controlled, both absorbed and unabsorbed slack have positive effects on technological innovation. And *environmental uncertainty negatively moderates the relationship between absorbed slack and technological innovation while the environmental uncertainty had no moderating effect between unabsorbed slack and technological innovation.* (Bae & Rhee, 2014) This means that the degree of impact of organizational slack on technological innovation may vary depending on the control or moderating variables and that in business, moderate levels of organizational slack can assist technological innovation and contribute to performance.

In addition, slack resources play a significant role in firm technological innovation as Ujari (2002) mentioned. He examined the impact of technology strategy, firm-level absorptive capacity and slack resources, on technological innovation with industry type as a moderating variable. Technology strategy, firm-level absorptive capacity and slack resources all have positive relationships with innovation, however, technology strategy and firm-level absorptive capacity on their own were not very strong predictors for innovation, only the slack resources variable was a very strong predictor of innovation on its own, regardless of the other variables.

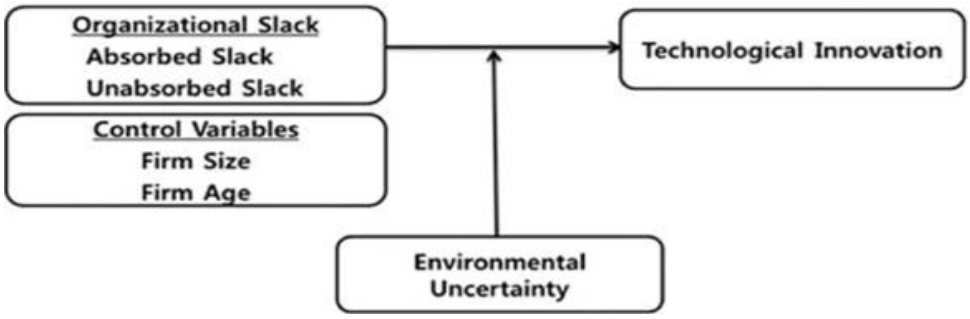

Figure 1: Conceptual Model on Slack-Innovation Relationship (Bae & Rhee, 2014)

Heng, Ding, Guo, and Luo (2014) also researched the relationship of organizational slack and innovation. They constructed a conceptual model (Figure 3.2) that links organizational slacks, entrepreneurial orientation and product innovativeness together, based on the insights from both resource-based view (RBV) and dynamic capability theory (DCT). Through drawing implications from both RBV and DCT, their study

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not only gives a more holistic perspective on slack but also helps firms to achieve the innovation implications of Entrepreneurial orientation (EO) by its moderating impacts on slack – innovation linkage. From its review of related literature, on the first part it points out that the absorbed slacks as resources can be substitutable with other resources that are less constrained in the redeployment factor, while the unabsorbed slacks as resources cannot be substitutable with resources such as absorbed slack. From its second set of review of related literature, it points out that when adding entrepreneurial orientation as the moderator, the relationship between two types of slack and product innovativeness becomes highly responsive.

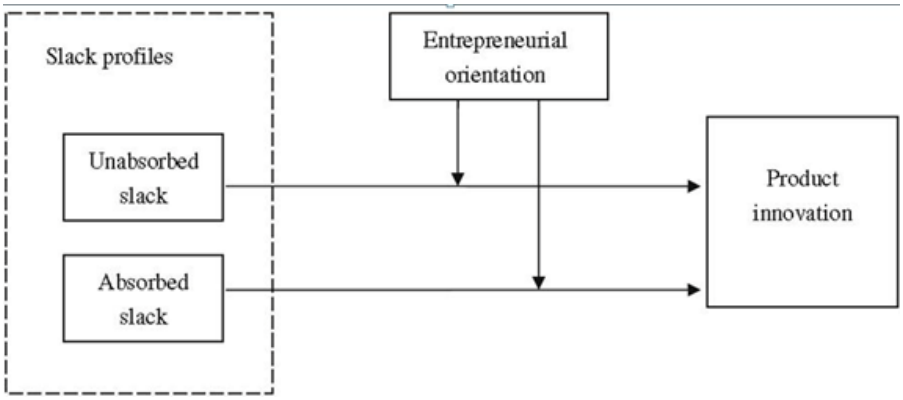

Figure 2: Conceptual Model on Slack-Innovation Relationship (Heng *et al*., 2014)

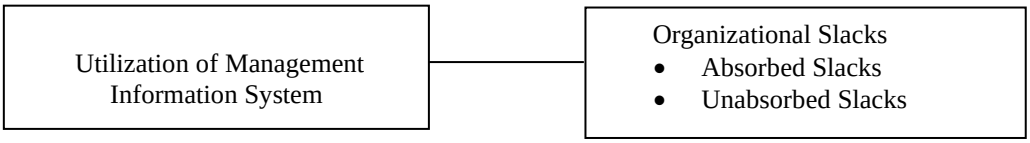

Figure 3: Operational Framework

4. RESEARCH METHODOLOGY

4.1 Research Design

This mixed methods study used a single embedded case study design for data collection and analysis. Both quantitative and qualitative data collection methods were surveys, participant observation and fieldwork. A survey was used in the study because it can be used to collect information from a large population relatively conveniently and efficiently. Surveys are systematic, self-monitoring, and representative as it is often used in research studies (Burton, 2007). Survey as a methodology studies the sampling of individual units from a population and constructs questionnaires as a form of quantitative data collection. On the other hand, participation-observation was also used in the study. Burton (2007) defined participant observation as the systematic description of behaviors in a social setting of a chosen study. Furthermore, survey forms were also deployed to assess the management information system (MIS) efficiency and effectiveness in an organization. The researcher also chose to do fieldwork for this study since it is often used to monitor human behaviors in natural conditions of their

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daily life (Basinska, 2012). Hence, the researcher is closer to the real world and thus gains from immediate contact with the respondents. It is one of the best ways to discover the particular information required and to answer research problems.

The advocate employed descriptive analysis for this study by making use of the information from the surveys and interviews. The mean, median, and mode are only a few examples of the statistics that are summarized and presented in an understandable way using descriptive analysis. However, the researcher chose not to include the median in this study's situation because it was deemed unnecessary for the analysis. By displaying the variables or sub-variables to be utilized against the various study cases, cross-tabulation is a statistical analysis that presents the data in tables in a way that makes it easier for the reader to detect patterns and trends from them.

4.2 Sampling Plan

According to Robert Yin (2014), the embedded case study involves more than one unit of analysis; it occurs when, within a single case, attention is also given to a subunit or subunits. The subunits frequently provide important opportunity for in-depth examination, strengthening the understanding of the individual situation. The home and garden sector of the home improvement sector, where MMI Company operates, was the subject of the study. on order to account for the lag effect on innovation, the Company was screened to ensure that they have been using management information systems (MIS) for at least three (3) years. Surveys were sent to the selected organization to be completed by internal and external users to ascertain the impact MIS has on staff members and clients. Additionally, because this study employed a mixed-methods approach, the researcher also spoke with every department employing the MIS of the selected organizations, as well as the finance and information technology (IT) departments.

4.3 Method of Data Analysis

According to Creswell (2009), there are different approaches in a mixed method data analysis. In concurrent strategies, data can be transformed to either quantifying qualitative data or qualifying quantitative data. Quantifying qualitative data involves creating codes and themes and calculating their frequency in the textual data, which allows the researcher to compare the results with the data. Another approach is to look at multiple levels. In the simultaneously embedded model, surveys were conducted at one level to collect quantitative results from the sample, and interviews were conducted simultaneously to explore the phenomenon with specific individuals. When comparing data, data from both data types is combined into a matrix. The horizontal axis could be a quantitative categorical variable, while the vertical axis could be qualitative data. The data in the cells can be either quotation marks, number codes or some combination. A matrix can represent a combined data analysis.

5. RESEARCH FINDINGS

5.1 Initial Analysis

As mentioned in the previous section, the researcher used self-administered questionnaires to collect data from both employees and customers of MMI. In-depth

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interviews were then conducted with the company's IT managers to gather their opinions. Both quantitative and qualitative data were collected, internal customers of the responding companies were asked to answer a survey about the slackness of the organization in using MIS.

5.2 Demographic Profile

Table 1 shows the demographic profile of respondents from the company. The table also includes the profile of each IT manager (or its equivalent) who was selected for the interview. The internal respondents of the study were the IT managers of the respective companies and the users of the MIS while the external respondents of the study are the customers who avail of each company's products and/or services.

Table 1: MMI Respondent Profile

Company Name	**Internal Respondents**		**External Respondents**	
MMI	Freq count	% share	Freq count	% share
1. Location				
Warehouse	9	27.27%	N/A	N/A
Office	24	72.73%	N/A	N/A
2. Age				
18-25				
26-30	17	56.67%	1	6.67%
31-35	6	18.18%	3	20%
36-40	4	12.12%	1	6.67%
41-45	1	3.03%	3	20%
46-50	0	0%	6	40%
51-55	1	3.03%	1	6.67%
56-60	3	9.09%	0	0%
	1	3.03%	0	0%
3. Gender				
Male				
Female	12	36.36%	15	100%
	21	63.64%	0	0%
MMI	**Name**		**Rank**	
4. IT Representative	Jason Figueroa		IT Administrator	

5.3 Organizational Slacks

Table 2: Absorbed and Unabsorbed Slacks

Organizational Slack	**MMI Company**
Absorbed	Mean: 3.10

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	Mode: 3
Unabsorbed	Mean: 2.96 Mode: 3

Table 3: Organizational Slack frequency

Organizational Slack	Survey Questions	Local Company MMI (33)	
		Frequency	Share%
Absorbed Slack	1. The firm has been operating below engineered capacity.	1- 0 2- 8 3- 19 4- 6 5- 0	1- 0% 2- 24.44% 3-57.58% 4-18.18% 5-0%
	2. The equipment have not reached their limits.	1-0 2-5 3-18 4-10 5-0	1-0% 2-15.15% 3-54.55% 4-30.30% 5-0%
	3. The productive capacity of the firm is not fully utilized by its employees.	1-0 2-3 3-22 4-8 5-0	1-0% 2-9.09% 3-66.67% 4-24.24% 5-0%
	4. The firm always has accessible funds for major repairs.	1-0 2-0 3-22 4-11 5-0	1-0% 2-0% 3-66.67% 4-33.33% 5-0%
	5. The firm has been having a hard time paying unsettled accounts.	1-0 2-8 3-21 4-4 5-0	1-0% 2-24.24% 3-63.64% 4-12.12% 5-0%
	6. The firm has excess inventory funds.	1-0 2-5 3-22 4-5 5-1	1-0% 2-15.15% 3-66.67% 4-15.15% 5-3.03%
	7. The firm has excess capacity.	1-0 2-9 3-17 4-7 5-0	1-0% 2-27.27% 3-51.52% 4-21.21% 5-0%
	8. The firm has excess capital for general expenses.	1-0 2-0 3-23 4-8 5-2	1-0% 2-0% 3-69.70% 4-24.24% 5-6.06%
Unabsorbed Slack	9. Retained earnings of the firm have been sufficient.	1-0 2-0	1-0% 2-0%

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		3-24 4-9 5-0	3-72.73% 4-27.27% 5-0%
	10. A pool of financial resources can be used on a discretionary basis.	1-0 2-0 3-24 4-6 5-3	1-0% 2-0% 3-72.73% 4-18.18% 5-9.09%
	11. Necessary bank loans can be obtained.	1-0 2-0 3-28 4-4 5-1	1-0% 2-0% 3-84.85% 4-12.12% 5-3.03%
	12. The firm has redundant employees.	1-0 2-6 3-24 4-3 5-0	1-0% 2-18.18% 3-72.73% 4-9.09% 5-0%
	13. The firm has unused production capacity.	1-0 2-9 3-24 4-0 5-0	1-0% 2-27.27% 3-72.73% 4-0% 5-0%
	14. The firm has unnecessary capital expenditures.	1-0 2-13 3-20 4-0 5-0	1-0% 2-39.39% 3-60.61% 4-0% 5-0%
	15. The firm has unexploited opportunities.	1-0 2-13 3-19 4-1 5-0	1-0% 2-39.39% 3-57.58% 4-3.03% 5-0%

The mean score for the questions under absorbed slack is 3.10. Questions 1, *the firm has been operating below engineered capacity,* and 5, *the firm has been having a hard time paying unsettled accounts,* have scores that fell under the disagree response. It can be inferred that the users disagree that the firm has been operating below engineered capacity and that the firm has been having a hard time paying unsettled accounts. Questions 2, *the equipment have not reached their limits,* 3, *the productive capacity of the firm is not fully utilized by its employees,* 4, *the firm always has accessible funds for major repairs,* 6, *the firm has excess inventory funds,* 7, *the firm has excess capacity,* and 8, *the firm has excess capital for general expenses,* have mean scores that fall below the neutral level. It can be inferred that the users have a neutral response when asked if the equipment have not reached their limits, the productive capacity of the firm is not fully utilized by its employees, the firm always has accessible funds for major repairs, the firm has excess inventory funds, the firm has excess capacity, and if the firm has excess capital for general expenses.

The mean score of the questions under unabsorbed slack is 2.96. Question 14, *the firm has unnecessary capital expenditures,* scored 2.94 which is a disagree response. It can be inferred that the users disagree that the firm has unnecessary capital expenditures.

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Questions9, *retained earnings of the firm have been sufficient,*10, *a pool of financial resources can be used on a discretionary basis,* 11, *necessary bank loans can be obtained,* 12, *the firm has redundant employees,* 13, *the firm has unused production capacity*, and 15, *the firm has unexploited opportunities,* have mean scores that fall below the neutral response. It can be inferred that the users have a neutral response when asked if the company has sufficient retained earnings, a pool of financial resources can be used on a discretionary basis, necessary bank loans can be obtained, the form has redundant employees, the firm has unused production capacity, and if the firm has unexploited opportunities.

MMI had high absorbed slack but low unabsorbed slack as perceived by their staff, which means that despite having excess amount of costs in the organization, the number of untapped resources in the company is not very high.

5.4 Organizational Slack Cross-case Analysis

Table 4: Organizational Slack Cross-case Analysis

IT Manager	Survey Respondents	Company Documents	Overall	Mean and Mode
There is minimal to no slack time available that employees could use or take advantage of. Depends upon how management manages the available slack time and how these employees utilize the said slack time.	Employees disagreed and stayed neutral when asked if the firm has excess inventory funds and capacity. However, they have agreed that funds are accessible when needed.	The output produced by the company is well within the capabilities of the system, so there have been less funds allocated for the system and reserve funds, but are more focused on the equipments that need to be changed	The slack was dependent on the utilization of the employees with regards to their resources. The response of the survey respondents and the interviewee are quite similar.	Mean: 3.03 Mode: 3

There is little to no spare time available at MMI that employees could use or benefit from. For instance, if there is a heavy task today, there can be slack the following day. However, MMI's employees frequently utilize their slack time to chat with coworkers or use their phones, instead of coming up with ideas for the business. As a result, much will depend on how the management uses the available slack time.

When asked if the company has excess inventory cash and capacity, the majority of the employees disagreed and remained uncommitted. They both concur, though, that the company has extra cash on hand to cover normal expenses and can access the money when it's needed. The workers also concur that essential bank loans can be obtained and that a pool of financial resources can be used at their discretion. They disagreed that the company has excess capacity and unnecessary staff.

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6. CONCLUSION

Between absorbed and unabsorbed slacks, both can influence specific types of innovation. It is apparent that absorbed slack has a stronger effect on innovation for most companies. However, not all the effects of slacks are positive. The absorbed slack of MMI is a little bit greater than its unabsorbed slack. Slack can be beneficial to an organization, as was evident from past literature. Whether organizational slack benefit or harm the company depends on how thee employees utilize their slack time. Nonetheless, for small businesses like MMI, the impact may be more detrimental because majority of the staff members are unaware of most system functionalities. In addition, the management rarely takes the staff members' advices and suggestions into consideration. As a result, while organizational slack may help with improving customer satisfaction, operational management, and financial investment, absorbed slack may either help or impede the organization's efficiency.

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