

# The Role of Mobile Based Accounting Information Systems for MSMEs Performance

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**ABSTRACT**--*The implementation of a mobile-based Accounting Information System (AIS) that can help compile financial statements is highly awaited by MSMEs. The results of the first research in the form of mobile-based AIS prototypes have been piloted to several MSMEs, the trial results provide information that MSMEs are very much waiting for the presence of Appropriate Technology in the form of an AIS application that will be used in assisting the administration of their business. This research applies appropriate technology in the form of mobile-based accounting information system applications/software for MSMEs. The specific objective to be achieved is to test the effectiveness of the system in improving the performance of MSMEs. This study aims to evaluate the effectiveness of mobile-based AIS for MSMEs. A type of summative evaluation research that emphasizes product capabilities in this case appropriate technology in the form of AIS applications. Evaluation actions are carried out by measuring the performance of MSMEs before and after using AIS in managing their business. AIS is declared effective if there are significant differences in MSMEs performance. Data analysis techniques used in evaluating system effectiveness are qualitative descriptive analysis. The results showed that there were differences in the business performance of MSMEs with indicators after the implementation of AIS of MSME business administration was more neat and organized than before the implementation of AIS.*

**Keywords**--*MSMEs, Accounting, Information, System, Mobile*

## I. INTRODUCTION

Micro, Small and Medium Enterprises (MSMEs) are an important and large sector of contribution in realizing national economic development goals, such as economic growth, employment opportunities, increased foreign exchange, and regional economic development. It is recognized that (MSMEs) have an important role in development and economic growth, not only in developing countries such as IndoneAIS, but also in developed countries such as Japan, the United States and European countries (Mulyanisman, 2012). In the midst of the monetary crisis in mid-1997, where big businessmen and state-owned enterprises could not survive, small businesses (and the informal sector) were able to survive in the midst of the crisis and even develop. Small businesses and the informal sector have shown their participation in the national economy in various contributions both in terms of macro and micro (Winarni, 2009). Referring to the fact that MSMEs contributes greatly to

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economic development, it is appropriate to develop MSMEs which are expected to lead to the partnership of MSMEs owners in particular and the surrounding community and increase the welfare of the nation.

The development of MSMEs is not merely a step that must be taken by the Government and is only the responsibility of the Government. The UMKM itself as a developed party, can also swing steps together with the Government. In addition to the Government and MSMEs, the role of the Banking sector is also very important in relation to all matters concerning funding, especially in terms of lending or establishing banking policies. Furthermore, related to the availability of funds or capital, the role of investors, both from within and outside the country, cannot be excluded. Universities/Academics can also participate in the development of MSMEs through the contribution of science and technology that can help MSMEs to manage their businesses.

Accounting plays an important role in the progress of a small business. However, so far there are still many MSMEs that do not understand the importance of accounting implemented in the financial statements, even though it is very beneficial for business development. The industrial structure in Indonesia shows that the number of small, medium and cooperative companies is actually more compared to large companies. However, at this time many MSMEs have difficulty obtaining credit, due to the lack of clarity in their accounting system. The accounting and financial systems in large companies are of course tested and are able to support the activities of the company, so this is a challenge for small businesses. Many MSMEs are too focused on how to make a unique product, while accounting and finance systems are often subordinated. This has caused their financial data to be irrelevant because they are carried out with makeshift records (Sinarwati and Kertiasih, 2017). While the broad accounting system not only provides a recording system, but is a system used to process financial information so as to produce competent and critical data, and can be further analyzed for future company development. Even though the company is small, but with clear standards and procedures, a measuring instrument will be formed that is useful for monitoring the company's performance, whereas without a clear measurement tool, the company will not be quick to follow up on the development or setbacks of the company.

MSMEs and cooperatives in the Bali region from year to year have increased, from the data of the Bali Provincial Office of Cooperatives and MSMEs, the number of MSMEs in 2014 reached 1.207 companies spread across regencies in Bali, one of them in Badung Regency. Badung Regency has the highest number of MSMEs compared to other regency in Bali Province. The number of MSMEs owned by each Regency in the Province in Bali is presented in Table I below:

**TABLE 1:** Number of MSMEs in each Regency in Bali

Number	Name Of Regency	Number Of MSMEs (unit)
1	Badung	197
2	Tabanan	173
3	Bangli	167
4	Denpasar	157
5	Gianyar	133
6	Karangasem	130
7	Jembrana	128
8	Klungkung	122

Resources: PT Bali Tourism Development (Persero) 2014

MSMEs in Badung Regency were 197 units spread across various business sectors, namely: 44 Units in the industrial business sector, 68 units in the trade sector, 6 units in the agricultural business sector, 11 units in the livestock business sector, 4 units in the fisheries business sector and 64 units in service business sector (Office of Cooperatives, Industry, Trade and MSMEs of Badung Regency, 2017).

The first study has successfully developed a prototype of a mobile-based accounting information system for MSMEs by conducting trials on MSMEs in Badung Regency. Development of information system prototypes for MSMEs was done to resolve the problem of the inability of MSMEs to prepare financial statements because of the limited knowledge of accounting records, the perceived complexity of the accounting process, and the assumption that financial statements were not important for MSMEs (Rudiantoro, 2011), infrastructure unpreparedness, shortages Human Resources and indiscipline in recording (Sinarwati and Hearwati, 2014).

The prototype of a mobile-based accounting information system for MSMEs as a product of the first/2017 study, received a positive response from the owners of MSMEs and they sincerely hoped that the prototype would be processed in a further process to become the appropriate technology that would be used to help manage its business, especially used to report finance. This research applies appropriate technology in the form of mobile-based accounting information system applications/software for MSMEs that aim to evaluate the effectiveness of mobile-based AIS for MSMEs.

## **II. LITERATURE REVIEW**

The information system is a tool for presenting information in such a way that it is beneficial for recipients, while the accounting information system is a system that converts business transactions into financial information that is useful for the user. (Kusrini and Koniyo, 2007). Information systems can be a strength of strategy and tools for organizations that provide benefits to the promotion aspect and the strength of competitiveness (Buhalis, 2009). Adoption of Information Technology provides the ability for MSMEs to provide better services and competitiveness. Information Technology has also proven to have a positive impact on organizational performance (Apulu and Latham, 2011).

Setiawan, et al (2008) who designed accounting information systems on MSMEs using the RAD (rapid application development) method with the SQL programming language found that applications designed were able to provide financial report information for trading companies consisting of income statements, changes in capital reports and balance sheet. Sutrasno (2012) who analyzed and designed a mobile-based accounting information system on CV. Matrix Cilacap found that the design of an accounting information system designed was able to make employee performance more efficient and effective because employees did not need to write notes manually. In addition AIS is able to provide convenience to company leaders to monitor the company's financial condition.

Wiharjanto (2012) found that the design of a mobile-based cash sales system created with the Macromedia Dreamweaver program with the PHPMySQL database was able to secure the company's wealth.

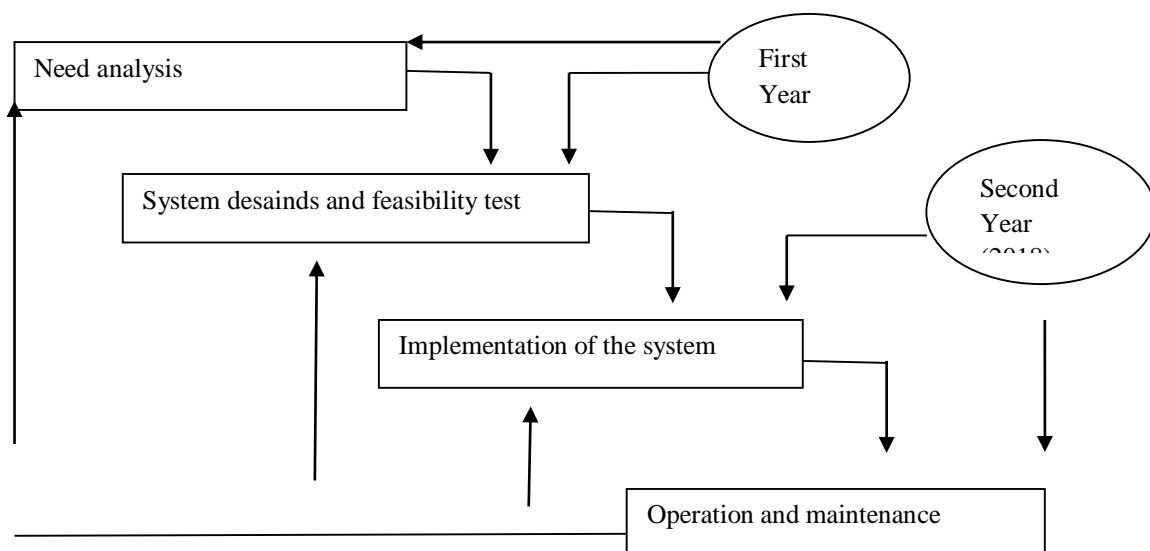
Mujiono (2013) who designed the Small and Medium Enterprise Accounting Information System at Erfa Busana Addimiyati based on mobile using a prototyping model and built using the software development model SSAD (Structured Analysis and Design) found that the system was able to process and display financial data in the form of general journals, ledger and income statement and balance sheet from the input of data transactions by the user.

Indarto (2010) who designed a mobile-based cash sales accounting system with SDLC development methods found that a mobile-based cash sales system provided long-term benefits and benefits compared to the old (manual) system. Wiratama and Damayanti (2014), evaluating the effectiveness of the Accounting Information System in the hotel industry in the BTDC area of Nusa Dua Bali, found that the accounting information system used was effective.

Research on the development of mobile-based AIS for MSME owners is a follow-up of previous year's research. In 2014 Sinarwati and Herawati conducted a study on the analysis of factors that have not applied the financial records based on SAK ETAP on MSMEs.

### III. RESEARCH METHOD

This study uses Sumative Evaluation Research that evaluates the effectiveness of mobile-based AIS in improving MSME performance. A summative evaluation design by conducting a qualitative descriptive analysis to evaluate the differences in the performance of MSMEs before and after using a mobile-based accounting information system application in managing its business. The mobile-based AIS was developed with the waterfall model referring to Martono and Kridalukmana (2014). The work procedure for developing mobile-based SIA using the waterfall model is presented in Figure I below:



**Figure 1:** The design work for AIS development using the Waterfall model (referenced from Martono dan Kridalukmana, 2014)

The determination of MSMEs that are used as samples is based on quota sampling, considering that there are six districts in Badung Regency, each sub-district is given 2 MSMEs quotas as samples. Determination of which MSMEs were selected in each district was determined based on purposive sampling, they were MSMEs would be selected with the highest annual sales in each district, based on data obtained from the Badung Regency Industry and Trade Office. At the evaluation stage of the application of product development results, research data was collected by observation techniques. The instrument for collecting data is a worksheet to evaluate the performance of MSMEs users before and after applying the application in managing their business.

## RESULTS AND DISCUSSION

This result show that have been achieved to date are the implementation of mobile-based accounting information system applications for MSMEs. The application of the system application is carried out to MSMEs that have conducted product trials during the first year of research in 2017. The list of MSMEs that implement mobile-based accounting information systems is presented in Table II

**TABLE 2:**Data on MSMEs Registered at the Office of Cooperatives, Industry and Trade MSMEs of Badung Regency

Number	Group Name	Name Of Leader	Address
1	Carving Art Group	Mr. I Ketut Mahardika	Br. Penyarikan Kekeran Mengwi District
Village2	Mandara Giri Carving Art Group	Mr. I Wayan Widyasuta	Br Dangin Pangkung Kekeran Mengwi District
3	Decoration Group	Mr. I Wayan Merta	Br Kedua Baha Village Mengwi District
4	Sari Clothing Tailor Group	Mrs. Ni Nyoman Yadnya	Br Dukuh Moncos Sobangan Mengwi District
5	Bali Carving Carfment Group	Mr. IB Putu Windu	Br Pengabetan Baha Village
6	Nadi Ukir Art Group	Mr. I Made Subrata	Br. Gelagah Puwun Kekeran Village
7	Kanti Dharma Group	Mr. I Made Arsana	Br Badung Gulingan Village Mengwi District
8	Merta Nadi Carving Art Group	Mr. I Wayan Edhi Mecis	Br Batu Lumbung Sangeh Village Abiansemal District

9	Fortunasari Ikat Weaving Group	Mr. Gusti Ayu Manis	Br Getasan, Getasan Village Petang District
10	Adhiyasa Handy Craft Group	Mr. I Gusti Ketut Adhi Putra	Br Kesaman Abiansemal Village
11	Santi Jaya Carving Group	Mr. I Putu Agus Santika	Br Mundani Kapal Village Mengwi District
12	Meat Processing Industry Group	Mrs. Ni Luh Ayu Wulantari	Darmasaba Village Abiansemal District
13	Tedung Mas Craft Group	Mr. I Nyoman Suparta	Br Pande Mengwi Village Mengwi District
14	Gaya Warna SPA Home Industry	Mrs Rai	Sempidi Village Mengwi District

Resources: Badung Regency Of Industry and Trade Office

The obstacles that researchers face when implementing the product are that there are several MSMEs owners who are not used to working with small screens and requesting programs be transferred to computers or laptops, while products are designed to be operated via smart phones with one of the applications being mobile in consideration. MSMEs owners are able to control their business from anywhere and anytime. The solution to overcome these obstacles researchers suggest that MSMEs owners use smart phones with widescreen. Another obstacle faced at the time of product implementation is that there are a small number of MSMEs owners whose education level is still low, even though the owner of the enthusiasm to implement the product (mobile-based accounting system application), because the product is considered important to compile financial statements that are very helpful in business administration, but experience difficulty in operating a smart phone and remembering procedures or operating stages. The solution to overcome this obstacle requires training and assistance in the operation of a mobile-based accounting information system. Training and mentoring is important and urgent because large MSMEs turnover and opportunities to grow rapidly also exist, so that the preparation of financial statements is absolutely necessary, especially the owner has a high willingness to be able to implement a mobile-based accounting information system to help business management.

In the three-month product application phase, there were differences in the performance of MSMEs before the implementation of a mobile-based accounting information system. MSMEs performance indicators in this study are the existence of a neater and more organized MSMEs business administration. The application of a mobile-based accounting information system motivates MSMEs owners to record transactions that occur in their businesses and monitor the progress of their business through smart phones. The mobile-based accounting information system application makes it easy for owners to know the development of a business without having to be bothered by carrying a laptop.

This finding is in line with the findings of Oswari, et al (2008) who found that the level of use of information technology and supporting facilities significantly affected the company's overall performance. This result is also in line with the findings of Utari and Dewi (2018) who found that technology affects the income of MSMEs, meaning that the more sophisticated technology used, the higher the income received by MSMEs.

The income statement, changes in capital and balance sheet generated by the system as a product of this research that has helped MSMEs improve their business administration. This is in line with the findings of Setiawan, et al (2008) who designed accounting information systems on MSMEs using the RAD (rapid application development) method with the SQL programming language found that applications designed were able to provide financial statement information for trading companies consisting of income statements, report on changes in capital and balance sheet.

## V. CONCLUSION

The important things that can be summarized from the previous description are: 1) This study has implemented the application of research products, namely mobile-based accounting information systems for MSMEs, research products capable of improving the performance of MSMEs with indicators of differences in performance of MSMEs before implementing a mobile-based accounting information system. 2) There are several obstacles faced when implementing a mobile-based accounting information system, namely the difficulty of MSMEs owners operating the system on a small screen and there are a small number of MSME owners with a low level of education having difficulty remembering system operating procedures, but the solution was able to find a solution .

The creation of a research product that is useful for the community is the goal of a research work. Achieving these goals requires synergy between researchers and partners. MSMEs and local governments as research partners are advised: 1) Actively coordinate with researchers when finding obstacles in the operation of a mobile-based accounting information system. 2) Perform product maintenance and keep backing up data to maintain data security. 3) Local governments should monitor and help provide attention in the form of training to improve the quality of human resources.

## REFERENCES

1. Apulu, I., Latham, A. Driver for Information and Communication Technology Adoption: A Case Study of Nigerian Small and Medium Sized Enterprises. *International Journal of Business and Management*, Vol. 6, No. 5, May 2011.
2. Buhalis, D. eAirlines: Strategic and Tactical Use of ICTs in the Airlines Industry. *Information and Management*, 41, 805-825, 2009.
3. Damayanti and Wiratama 2014. Penilaian Efektivitas Sistem Informasi Akuntansi Pada Industri Hotel di Kawasan BTDC Nusa Dua Bali. *E-Jurnal Akuntansi Universitas Udayana*. 9.1. ISSN: 2302-8556, halaman 237-244.
4. Indarto Totok. 2010. Sistem Akuntansi Penjualan Tunai Berbasis Mobile Pada Perusahaan Kerajinan Karya Mandiri. *Jurnal Akuntansi FISE UNY*.

5. Kurniawan Teguh Martono dan Rinta Kridalukmana. 2014. Mobile Augmented Reality. *Jurnal Sistem Komputer*. Vol. 4. No 1. ISSN: 2087-4685. Jurusan Sistem Komputer Universitas Diponegoro. Semarang.
6. Kusriani dan Andri Koniyo. 2007. *Tuntutan Praktis Membangun Sistem Informasi Akuntansi dengan Visual Basic dan Microsoft SQL Server*. h 5. Andi Offset. Yogyakarta.
7. Mujiono. 2013. *Sistem Informasi Akuntansi Usaha Kecil dan Menengah Pada Erfa Busana Addimiyati Berbasis Mobile*. Skripsi Mahasiswa Program Studi Sistem Informasi. Universitas Jember.
8. Mulyanisman. 2012. *Analisa Penerapan Akuntansi Keuangan Pada Perusahaan Menengah Bidang Perdagangan*. Artikel. Di akses dari [www.google.com](http://www.google.com).
9. Oswari, Teddy; Suhendra E. Susy; Harmoni, Ati. 2008. Model Penerimaan Teknologi Informasi: Pengaruh Variabel Prediktor, Moderating Effect, Dampak Penggunaan Teknologi Informasi Terhadap Produktivitas dan Kinerja Usaha Kecil. *Proceeding, Seminar Ilmiah Nasional Komputer dan Sistem Intelijen (KOMMIT)*. Auditorium Universitas Gunadarma, Depok 20-21 Agustus. ISSN: 1411-6286.
10. Rudiantoro, Rizki dan Sylvia Veronica Siregar. 2011. *Kualitas Laporan laba/rugi UMKM serta Prospek Implementasi SAK ETAP*. Universitas Indonesia.
11. Sinarwati, Ni Kadek dan Kertiasih, Ni Ketut. 2017. *Pengembangan Sistem Informasi Akuntansi Berbasis Mobile Bagi UMKM*. Laporan Penelitian. LPPM Undiksha. Singaraja.
12. Sinarwati, Ni Kadek dan Trisna Herawati, Nyoman. 2014. *Analisis Faktor-Faktor Yang Mempengaruhi Belum Diterapkannya Pencatatan Keuangan Berbasis SAK ETAP Pada UMKM (Study Kasus UMKM di Kabupaten Buleleng)*. Laporan Penelitian. Lemlit Undiksha. Singaraja.
13. [Setiawan Berlia, Kodrat Imam Satoto, Adian Fatchurrohimi. 2008. *Sistem Informasi Akuntansi Untuk UKM*. Makalah Seminar Tugas Akhir. Teknik Informatika dan Komputer. Universitas Diponegoro.
14. Sutrasno Tatag. 2012. *Analisis dan Perancangan Sistem Informasi Akuntansi Berbasis Mobile Pada CV. Matrix Cilapap*. Naskah Publikasi. Sekolah Tinggi Manajemen Informatika dan Komputer AMIKOM. Yogyakarta.
15. Utari, Tri dan Dewi, Putu Martini. 2018. Pengaruh Modal, Tingkat Pendidikan Dan Teknologi Terhadap Pendapatan Usaha Mikro Kecil dan Menengah (UMKM) Di Kawasan Imam Bonjol Denpasar Barat. *E-Jurnal EP Unud*, 3(12): 576-585. ISSN:2303-0178
16. Winarni. 2009. *Menerapkan Penggunaan Laporan laba/rugi Pada Usaha Kecil dan Menengah*. *Jurnal Ilmiah Akuntansi*. Volume I No. 2.
17. Wiharjanto Yuwandito. 2012. *Perancangan Sistem Penjualan Tunai Berbasis Mobile Sebagai Sarana Informasi Produk Bagi Konsumen Pada PT. Warna AC*. *Jurnal Nominal Volume I Nomor I*. Sekolah Tinggi Manajemen Informatika dan Komputer AMIKOM. Yogyakarta.