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RESEARCH ARTICLE

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MOBILE TECHNOLOGIES IN CUSTOMER SERVICE: A STUDY WITH AGRIBUSINESS MANAGERS

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ABSTRACT

The study sought to identify the extent to which the use of Mobile Technologies (TM) impacts consumer demand in the agribusiness production chain. To achieve this goal, the TM in which agribusiness managers are inserted was contextualized, the tools that permeate the service to the agribusiness consumer market were mapped and the association between tm adoption and producers' performance in meeting demand was identified. The methodological strategy adopted to outline the research was a field survey with rural producers who sell products in a free fair. The results showed that rural producers use TM to meet the demand in which the items connectivity and portability stand out. The use of TM as a fundamental tool for producers to market products from the field, because receiving demand remotely helps in decision making and routine planning in the field.

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INTRODUCTION

A Mobile device proliferation has created an always-connected society, where anytime and anywhere services have enormous potential to offer customers an enhanced, more convenient and personalized shopping experience (SHEN *et al.* 2013). For Corso (2013), people and organizations interact in a world of rapid transformations where daily life is permeated by new information and communication technologies and actions take an increasingly rapid pace. This society made possible by Mobile Technologies (TM) incorporated in people's daily lives presents new scenarios of interaction between individuals and organizations (SANTOS, 2014). TM's applications can be in various ways (management, communication, entertainment) between the various branches of the economy (industry, agribusiness). For Souza, Oliveira and Custódio (2017), information technology has advanced in all areas with the use of smartphones, tablets and computers. These devices serve as entertainment with applications that provide leisure and fun to users. They are also excellent tools that speed up work in the professional environment. To Shen *et al.* (2013), with more and more consumers increasingly relying on mobile devices to communicate with their peers, mobile word-of-mouth gains considerable importance in raising awareness, testing and buying a new product. Among the challenges faced by managers is the fulfillment of demand to the consumer market.

For Oliveira (2017), customers are increasingly demanding and in search of ease, convenience and even make their purchases by smartphone. Thus, companies are adopting mobile technological service. One of the areas of the economy where the challenge in customer service and the constant use of TM is agribusiness. The current agribusiness scenario is influenced in addition to intense economic competition, the need to meet a higher demand for food requires increased productivity and communication (FLORINDO, 2015). According to calculations by the Center for Advanced Studies in Applied Economics (CEPEA), carried out in partnership with the Confederation of Agriculture and Livestock of Brazil (CNA), the growth of Brazilian agribusiness in the first quarter was 0.36% (CEPEA, 2020). As already mentioned, mobile and wireless information technologies have become great support tools for the tasks developed in people's daily lives (CORSO, 2013). Corroborating, Souza; Oliveira and Custódio (2017) analyze the growing phenomenon of consumerization and the representativeness of information technology in companies. Shen *et al.* (2013) presents the construction of a solid understanding of consumers' intention to use applications in consumer practice. Santos (2014) presents that even traditional managers seek TM for learning, improvement in management and believe that the use of the tool improves the interaction between the various users around agribusiness. Based on these studies in the organizational area of agribusiness and the interconnection in the area of TM, this article aims to answer the

following question: To what extent does the use of TM impact the customer demand in the agribusiness production chain?. Santos (2014) analyzes the construct elaborated by Sorensen (2011) in studies that analyze factors that lead to the management decision of agribusiness managers. To this end, the manager to be analyzed in this research will be delimited in the agribusiness area. Santos (2014) due interaction to the agribusiness context takes place because in agribusiness, the manager works in transit, remotely and exposed to various daily weather. Corroborating the importance of CNA agribusiness (2020) points out that the world's demand for agro products, whether food, fiber or bioenergy, will still grow, and few countries in the world will be able to meet this growth. In the direction of the discussion, this article aims to analyze the extent to which the use of TM impacts the customer demand fulfillment in the agribusiness production chain. In order to achieve the mentioned objective, the specific objectives were (I) Contextualize the TM where agribusiness managers are inserted (II) Map the tools that permeate the service to the agribusiness consumer market (III) Analyze the association between tm adoption and producers' performance in meeting demand. According to Junges, Klein and Barbosa (2014) it is not enough to develop solutions for information delivery, it is also necessary to know how to interpret them and understand how individuals react to use and how it affects their work. Based on this statement, the study presents to users of TM that in addition to the tools available in the market, knowing how to use in synergy with the client, is one of the important factors in meeting demand. This paper proposes to contribute in the academic area the aspects of the use of TM in the context of agribusiness.

LITERATURE REVIEW

This section covers Mobile Technology, as well as TM in customer service, use of IT in the agribusiness environment. The definition of TM can be obtained as a set of activities and solutions from technological resources that aim at the production, storage, transmission, access and use of information (CARVALHO *et al.* 2019). Kakiyama and Sorensen (2002), claim that the mobile phone allows communication in a distant or even absent space, allowing interaction between people and objects. TM can be seen as a means of manipulating data that in addition to helping the user achieve their goals, serves as a facilitator for day-to-day problems. For Penedo (2015), we cannot limit the area of application of TM to current devices, because the technology is present before its emergence. TM can bring several consequences for users and society as a whole, because moments of daily life, family members and work undergo changes with the use of technology (SANTOS, 2014). TM are the smartphone, notebook, tablet, among other similar tools that enable remote user interaction. From the emergence of new TM, the consumption of goods became more symbolic, bringing new ways of relationship between consumers and brands (MONTEIRO; FERNANDO, I.A. JUNIOR JUNIOR, 2016). For Carvalho *et al.* (2019), TM has achieved significant growth in recent years, where Brazil is the 4th country in the ranking of the most connected nations in the world. Consumers increasingly use more information from the digital environment, increasing the use of social media as social interaction platforms (MALAR, 2016). According to Oliveira (2017), the adoption of TM can be adopted in order to establish the client as the most important target to be served by e-business and e-commerce. The amount of media on the internet on the rise, has been putting more consumers in contact with more companies, along with other consumers (RYDÉN; RINGBERG, 2014. WILKE, 2015). The analysis of social networks not only aims to understand how the Inter-communication dynamics work, but also to interpret it in order to obtain better production techniques and generate more effective information exchanges among those involved (MEDRADO, 2019). Sorensen (2011), developed in the form of a portfolio of mobile services six features aimed at understanding mobile work, mobility and mobile interactions. In view of this construct, the author corroborates in a theme described as a study of TM in the context of the work. Santos (2014), presents that the author goes through the categories of interconnected services, presenting their characteristics and the importance of the context.

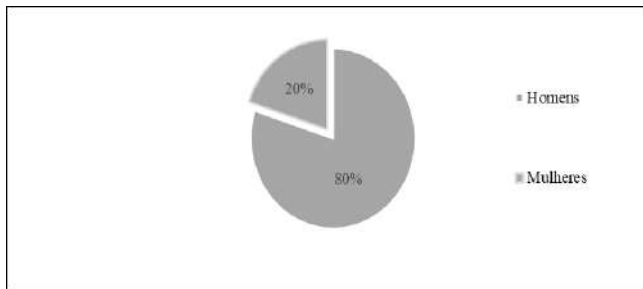
For Santos (2014), the service portfolio explores TM's mobile work and performance, dealing with TM's properties consisting of affordances and mechanisms. Sorensen (2011), states that affordances are resources for reflexive actions, that is, the opportunity for actions among existing characteristics, which differentiates performance. The construct will be used as a tool for the measurement of how the user uses TM in meeting consumer demand. Santos *et al.* (2015), presents managers in the context of TM as those who can take their work wherever they need to be. Carvalho *et al.* (2019), mobile devices affect almost all areas. The primary sector has about 5 million rural producers who generated more than R\$ 600 billion for the economy, and this growth is linked to IT developed to assist producers in and out of the field (SILVEIRA, 2018). For Fernandes *et al.* (2020), in addition to the socioeconomic relevance of this segment, this circumscription is guided by the maximization of appeals regarding food security, technological advances in food production, creation of new market niches and sustainable competitive advantage. With this advent, the increasing use of TM has influenced the configuration of companies in various sectors, because they are accessible in various locations and device formats (COSTA; KLEIN; VIEIRA, 2014). TM are increasingly integrated, facilitating the access of the producer, when seeking important information about decision-making about their business (ALMEIDA, 2017).

METHODS

This section will be used to present the methods, materials and procedures used to achieve the research objectives, which, related to the theoretical framework, will allow to answer the proposed problem. In order to meet the objectives delimited to answer the proposed problem, this research is characterized as quantitative. The quantitative or numerical description of trends, attitudes or opinions of a population (CRESWELL, 2007). In this case, the research will be based on the description of the portfolio of services prepared by Sorensen (2011). The strategy adopted to delineate the research was a survey. This type of research occurs when it involves the direct questioning of people whose behavior we want to know using some type of questionnaire (PRODANOV, FREITAS, 2013). This study uses structured questionnaires for data collection, as conducted by (SANTOS, 2014). The verification through a questionnaire will be used as a verification agent of the practices of using TM in meeting the demand. The sampling method selected for this study is non-probabilistic sampling, convenience sampling. According to Malhotra (2012), the selection of sample units is left to the interviewer, often the interviewees are chosen because they are in the exact place at the right time. There are criteria for evaluation and sample clipping such as clarity in the data collection process, the choice of the population with triangulation (PRODANOV, 2013). The sample to be studied will be the farmers of the municipality of Vilhena-RO who provide products such as (fruits, vegetables, vegetables) at the producer's fair. The producer's fair takes place every Sunday, in the shed located in the city center. The event in the shed of the center fair fills with colors, flavors and good smells, with items being sold directly from those who produce (VILHENA, 2019). In the search for the best analysis of the answers, we identified the data as the profile of the interviewees, and later the analysis of the indicators of Sorensen (2011), which will be the basis for the definitions regarding the use of TM by rural producers in meeting the demand.

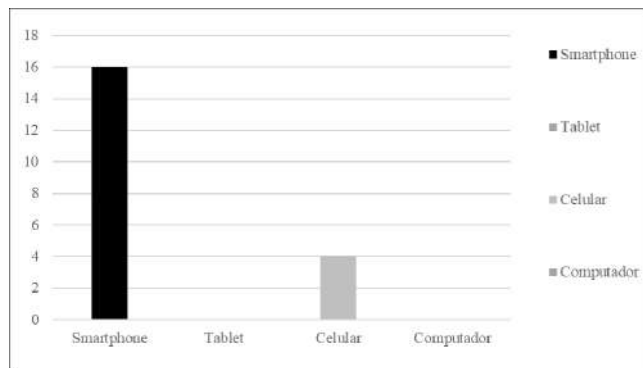
DISCUSSION

Through this section, the results obtained will be exposed. The characteristics of the study, analysis and relevant discussions will be addressed. The sample consisted of 20 people. The farmers living in the cities of Vilhena totaled 15 and the residents of Western Colorado are 5 people, both cities are located in the Southern Cone of the state of Rondônia. With graph 1, the composition of the interviewees will be evidenced 20% are women. Among the interviewees, it is noted that the level of education varies between 25% are considered as literate (they can only read, write and perform mathematical operations).



Source: Prepared by the authors.

Graph 1. Composition of respondents



Source: Prepared by the authors.

Graph 2. Tools used

50% have the primary and the other 25% managed to finish high school. Regarding the amount of time that the interviewees work in agribusiness, 65% stated that they have been working for more than 20 years as a rural producer. For sample definition purposes, 80% of the interviewees have access to and use the internet. From this percentage, we can have a parameter that 16 of the 20 rural producers use the internet on a daily life and in their work. Among the most popular TM tools (Smartphone, Tablet, Mobile and Computer), we were asked which of these tools the interviewees use. From graph 3, the collected data will be evidenced. When asked what TM features they use, 4 participants stated that they use the mobile phone, and 16 pointed out the use of a smartphone. It was observed that the producers do not use Tablet or computers. The others, who have internet access, reported that they use their smartphone and mobile phone. So we were able to build the sample for the research.

USE OF TM IN WORK ROUTINE: For analysis of the description of portfolio of services (SORENSEN, 2011; SANTOS, 2014), only the questionnaires of 16 interviewees who reported using the Internet and TM tools could be used. A questionnaire was used with yes response scans for positive answers and not for negative answers regarding the questions directed to the producers. The connectivity category, related to communication infrastructure, concurrency of updates, defining whether the user is isolated or logged on (SORENSEN, 2011). When asked if he communicates with the property when he is away, of the 16 respondents, 9 answered yes, communicate remotely with the property. In the question as to the quality of the property sign, if it is satisfactory, 87.5% of respondents stated that the sign on their property is good. This factor, corroborates with Santos (2014), technology, has been included in everyday life and in the most common objects and tasks, but it is the ability to connect and interact with other technologies that makes it noticeable and interesting to the user. Portability was measured with the producer's ability to port TM. For Sorensen (2011) feature such as miniaturization and possibility to transport the device. In this question, it was asked which TM feature is used, 25% of the interviewees use the cell phone, and the other smartphone to communicate. According to Freitas *et al.* (2017), agribusiness managers work in transit, remotely and at various locations and need access to information and constant communication to support. Thus, it

is noted that all interviewees have some type of TM in their day-to-day life.

THE USE OF TM IN DEMAND CARE

The item memory, according to Sorensen (2011), is encompassed in the ability to store data remotely; next to the item Pervasivity is according to Freitas *et al.* (2017), is defined as the ability to relate to the technological environment. It was obtained through the question whether the producer receives orders remotely, without the need for a personal contact with the customer, where 75% of respondents reported that yes, receive orders for TM tools. The variable intimacy, according to Santos (2014), analyzes the proximity of the technology to the user, seeking to identify whether he is an anonymous or close user. This factor was measured by the maximum percentage of customers you serve over the Internet, where 3 respondents answered that it meets more than 50% of demand and 3 meet 20 to 49% and 5 serve up to 19% of its clientele. It is noted that 75% remotely meet your demand. Finally, the priority variable, according to Freitas *et al.* (2017), a combination of connectivity, portability, memory, pervasiveness and intimacy, making it possible to identify the formality or informality of the activities. This variable encompasses all the other variables seeking to identify the most latent in the use of the sample studied. Thus, the question is whether the producer usually attends customers over the Internet, 87.5% answered yes. And when asking if they noticed any gain in the number of sales, after the use of TM, 100% of the interviewees agreed positively.

CONCLUSION

The research sought to identify the use of TM by the rural producer in meeting demand. The phenomenon was present in 16 of the 20 interviewees, who stated that they used the internet as a resource and the smartphone as a tool to communicate. In the focus of the use of TM to meet demand, the items connectivity and portability are observed as a highlight, in which the research shows that 100% of the interviewees use mobile devices. From the perspective of the analysis regarding demand fulfillment, the item intimacy was more evident as a factor of determining how much the producer uses tm tools in customer service, this factor showed that 75% of the interviewees communicate and receive some type of demand remotely. As a factor of importance to agribusiness, the research presents the use of TM as a fundamental tool for producers to market products from the field, because receiving the demand remotely helps in decision making and routine planning in the field. In a spare question to the portfolio of services, the questionnaire brought: do you use the internet to study? 100% of respondents said no. This factor serves as an alert, because with remote tools, the producer may be qualifying and using learning to improve their production and increase the quality of their products. Among the limitations of the research is the number of producers surveyed, because at the Vilhena fair there were few producers due to social restrictions due to the pandemic. From this study, another approach is suggested, such as the identification in another place about the use of TM in the fulfillment of demand.

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