Investigating the Small-Scale Service Providers: Basis for a Proposed Online Geolocation-Based Service Provider System

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Abstract*: The study aims to develop an online geolocation-based that will serve anonline platform that simplifies locating and hiring small-scale service providers in Butuan City, Agusan del Norte, Philippines. The comprehensive investigation delves into the current situation of small-scale service provision systems, including an analysis of the kinds of services offered and availability of services offered, the common barriers to hiring a small-scale service provider and searching for employment of the service providers. The primary data were collected through online survey questionnaires to understand better the local service provision system. The study results indicate a significant demand for a centralized, accessible platform that enhances visibility and connectivity between small-scale service providers and customers. The proposed online service provider system is expected to employ geolocation technology to offer real-time information and mapping, improving the efficiency of locating small-scale service providers. This platform aims to support local economic growth by increasing employment opportunities for small-scale service providers and offering convenience to residents in search of various services. The expected outcome is a more dynamic and integrated service market in Butuan City, fostering enhanced economic activities and community development.*

Keywords: Online geolocation-based, service provider system, small-scale service providers, Butuan City, online platform, service accessibility, service visibility.

I. INTRODUCTION

Small-scale service providers in Butuan City encounter difficulties in reaching and engaging potential customers and, similarly, customers struggle to locate these service providers. Unlike large corporations with great marketing resources and established brand recognition, small-scale service providers often find it challenging to compete for visibility and attract customers. This is particularly evident in local markets where competition may be slim but awareness and accessibility remain limited. Online geolocation-based service provider system offers a promising solution to this problem. It allows customers to reach service providers in their area more effectively by leveraging geolocation technology. Additionally, in Butuan City, small-scale providers often go unnoticed by customers seeking services unless they have ties to larger corporations or rely on word-of-mouth referrals. An online geolocation-based service provider system has the potential to address this issue by improving visibility, accessibility, and competitiveness ofthriving small-scale service providers in the community and ultimately empowering them to grow their businesses.

II. OBJECTIVES OF THE STUDY

This study exploration aims to achieve the following objectives:

- To identify the factors that influence the needs of the service providers and customers in the service provision in Butuan City.
- To analyze the current service provision of small-scale service providers in Butuan City.
- To propose an Online Geolocation-Based Service Provider System by utilizing PHP as the backend framework and HTML, CSS, and JavaScript as the frontend framework.

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- To formulate recommendations and suggestions for the proposed Geolocation-based Service Provision.

III. RELATED LITERATURE

Information search occurs when a consumer seeks solutions to their problem. For example, a consumer may search online, ask friends, read reviews, or visit stores to compare options. Information search can be influenced by factors such as the perceived risk, involvement, and complexity of the purchase, as well as the availability and credibility of the information sources [1]. Moreover, information search is a critical step in consumers' purchasing process, especially in highly involving products and services. This search process may be either internal or external: internal search refers to the consumers' mental reflection on their knowledge and experience of past events, whereas external search refers to the consumers' ability to gather information about consumer problems from the external environment. Information sources may be coming from family members or friends who are knowledgeable about the issue, Advertisements, or internet sites giving information about the product/services [2]. On the other hand, there are several ways for jobs: networking, working with executive recruiters, or search firms, answering ads posted on websites or in journals or newspapers, and attending job fairs. The best method varies from person to person by level of experience and career field [3].

Job searching can be a challenging process due to numerous reasons. For instance, the competition for wanted roles in oversaturated job markets can be overwhelming, making it difficult for job seekers to stand out. Additionally, entry-level positions often require a few years of experience, which is difficult to gain without first getting a job. Furthermore, with the advent of technology and automation, some traditional roles are becoming obsolete, requiring job seekers to reskill, and upskill [4]. The study identified several challenges encountered by local domestic workers in Egypt when it comes to using and accessing information. Foremost among these challenges were illiteracy and a lack of awareness regarding basic rights and information rights and needs. Additionally, participants face difficulties related to time constraints, psychological burdens, societal perceptions associated with domestic work limited access to information channels, inadequate training and skills, and financial constraints hindering their ability to access information [5].

Consumer choice is the process by which customers select the products or services that best suit their needs, preferences, and budget. It is a fundamental aspect of any market economy and a key driver of business success. Understanding how consumers make choices and what factors influence them can help businesses design better offerings, communicate more effectively, and increase customer satisfaction and loyalty [12]. There are several reasons why a customer might choose a particular company but it mostly boiled down to the following options: customer service, competitive pricing, or the product/service itself [13].

To further support improving employment rates in the country, the Technical Education and Skills Development Authority (TESDA) is encouraging more Filipinos to take up technical vocational education and training to learn more skills. TESDA, as the government agency mandated in the provision of upskilling and reskilling of the Filipino workforce, continues to push programs to enhance workers' skills through appropriate training in line with the National Technical Education and Skills Development Plan (NTESD) 2023-2028 [6].

The application of technology on labormarket platforms increases efficiency but is in a way quite distinct from conventional applications of technology. The Fordist model of full-time employment, for instance, increased productivity by applying technology to the production process—to the Labor process itself. It thereby enabled higher wages, along with increases in worker productivity. The use of robotics follows this same conventional model of increasing Labor productivity through the introduction of capital goods. The logic of Labor platforms is different. The technology of the platform can be thought of not as making the worker more productive in the actual production process but rather as making the market more efficient by lowering transaction costs. Gig work, which is a central part of the business model of most Labor platforms, takes advantage of this efficiency. The technology of Labor platforms achieves efficiency by, in effect, shifting the balance between the gig and the search [7].

Geolocation is the identification of the real-world geographic location of an object, such as any mobile device, or any networking device. Geolocation is closely related to the use of 24 positioning systems but can be distinguished from it by a greater emphasis on determining a meaningful location (e.g. a street address) rather than just a set of geographic coordinates. Internet and computer geolocation can be performed by associating a geographic location with the Internet

Protocol (IP) address, MAC address, Wi-Fi positioning system, device GPS coordinates, or other, perhaps self-disclosed information [8].

Online service provision commonly takes place between parties who have never transacted with each other before, in an environment where the service consumer often has insufficient information about the service provider, and the goods and services offered [10]. Nevertheless, Digitalization is expected to lead to positive employment growth in occupational profiles associated with products or services benefiting from increased demand due to the adoption of new technologies and in those affected by service provision processes [9]. Services that are especially suited to be offered via online Labor platforms, such as cleaning, driving, and tutoring, and frequently performed informally. The informal economy is thus important for recruiting workers for Labor platforms. Platform use, however, requires formal service provision, which workers in the informal economy often resist [11].

IV. METHODOLOGY

4.1 Research Approach
For this study, the quantitative approach was employed to achieve a measurable understanding of the research topic. It was utilized to gather data on various aspects related to the experiences and needs of small-scale service providers and customers to the current service provision system in Butuan City. This includes conducting surveys to fifty (50) respondents for small-scale service providers and fifty-nine (59) customers. Additionally, statistical analysis such as mean distribution and frequency were used to analyze the collected data and extract meaningful informationabout the current situations and the needs of both respondents.

4.2 Survey Questionnaire
The survey questionnaires for small-scale service providers and customers in Butuan City were designed to gather comprehensive data for the development of an Online Geolocation-based Provider System. The small-scale service providers' survey includes sections on demographic profiles, current service provision challenges, preferences for platform features, and open-ended recommendations. This structure intends to understand their background, job search methods, preferred functionalities, and suggestions for improvement. Similarly, the customer survey collects demographic information, experiences with service providers, current search methods, preferences for platform features, and recommendations. This data helps to identify user needs and challenges, ensuring the platform is designed to meet the requirements of both providers and customers effectively.

4.3 Participants of the Study
The respondents of the study consist of two (2) main groups: small-scale service providers and customers. Small-scale service providers are individuals who offer services independently within Butuan City. These may include individuals such as carpenters, construction laborers, electricians, house cleaners, house painters, laundry workers, plumbers, roofers, and welders. They represent the supply side of the service provider system and are crucial stakeholders in understanding the challenges and opportunities within the local service industry. On the other hand, customers are individuals who have used or are avail of the services offered by the small-scale service providers in Butuan City. These individuals represent the demand side of the service provider system and play a vital role in shaping market dynamics and consumer behavior.

4.4 Sampling Method
This study employed a purposive-convenience sampling method in selecting respondents based on specific experiences pertinent to the research objectives, ensuring their firsthand knowledge or experiences regarding service provision in Butuan City. The selected customers were chosen based on their prior experience in searching for and hiring small-scale service providers. The small-scale service providers in the study operate independently or in freelancing business, and they are not connected to any corporations or agencies.

4.5 Data Gathering Procedure

The datagathering procedure was initiated by selecting respondents directly involved in the service provision in Butuan City. Upon selection, the researcher crafted the survey questionnaire, which underwent thorough validation by an expert. Following the validation procedure, a transmittal letter, endorsed by the researchers' professor was issued to formally request respondents' participation in the survey. To facilitate data collection from customers with fifty-nine (59) respondents, Google Forms were utilized as a data-gathering platform. Conversely, for small-scale service providers with fifty (50) respondents, the survey questionnaire was translated to Cebuano dialect to ensure comprehension and the researcher personally administered the questionnaires, overseeing the respondents' completion process. Furthermore, the researchers remained available to promptly address any queries or concerns raised by the service providers during the survey administration. The data-gathering procedure employed in this study involves the collection of primary data directly from the respondents. Specifically, quantitative data concerning the process of service provision of small-scale service providers and customers in Butuan City is gathered, serving as a foundational resource for strengthening the capabilities of small-scale service providers.

4.6 Data Analysis

In the data analysis process, which adheres to a quantitative research approach, a weighted mean statistical treatment is integrated to comprehensively understand the collected data. Descriptive statistical techniques and frequency distribution were then employed to summarize the needs, challenges, and experiences of the respondents related to the service provision of Butuan City, with the weighted mean utilized to account for varying degrees of importance or significance attributed to different data points. Moreover, conclusions are drawn based on the statistical analysis results, providing information for decision-making to empower small-scale service providers by way of geolocation technology.

Table 1: The Interpretation of Range of the Weighted Mean

Range of the Weighted Mean	Interpretation
4.51 – 5.00	Strongly Agree (for the questions asked)
3.51 – 4.50	Agree (for the questions asked)
2.51 – 3.50	Neutral (for the questions asked)
1.51 – 2.50	Disagree (for the questions asked)
1.50 and below	Strongly Disagree (for the questions asked)

Table 1.0 presents the guide to determine the assessment level of the respondents on the current service provision system in Butuan City.

V. RESULTS AND DISCUSSION

This chapter discusses the analysis and interpretation of the data gathered from participants' responses in answering the specific questions of the study.

5.1 Profile of the Respondents

Table 2.0 Profile of Customers in terms of Gender

GENDER	FREQUENCY	PERCENTAGE %
Male	22	37.3%
Female	37	62.7%
Total	58	100%

Table 2.0 presents the distribution of the respondents according to customers' gender. As shown in the table, there are 37, or 62.71% of the respondents are female, while 22, or 37.29% are male. Most of the respondents who answered the survey were female. This implies that most of the respondents who acquired services from the service providers are female.

Table 3.0 Profile of Small-scale Service Providers in terms of Gender

GENDER	FREQUENCY	PERCENTAGE %
Male	29	58%
Female	21	42%
Total	50	100%

Table 3.0 presents the distribution of the respondents according to service providers' gender. As shown in the table, there are 29, or 58% of the respondents are male, while 21, or 42% are female. Most of the respondents who answered the survey were male. This implies that most of the small-scale service providers are male.

Table 4.0 Profile of Customers in terms of Age Group

Age Group	FREQUENCY	PERCENTAGE %
Below 30 years old	16	27.12%
31-40 years old	28	47.46%
41-50 years old	7	11.86%
51+ years old	8	13.56%
Total	59	100%

Table 4.0 presents the distribution of the respondents according to customers' age group. The largest proportion consists of respondents aged 31-40 years old, comprising a total of 28, or 47.46%, followed closely by the respondents aged below 30 years old comprising a total of 16, or 27.12%. The 51 and above age group represents 8 or 13.56% of the population. The age group 41-50 years old has the lowest representation among the surveyed respondents, accounting for only 7 or 11.86%.

Table 5.0 Profile of Small-scale Service Providers in terms of Age Group

Age Group	FREQUENCY	PERCENTAGE %
Below 30 years old	15	30%
31-40 years old	17	34%
41-50 years old	13	26%
51+ years old	5	10%
Total	50	100%

Table 5.0 shows the distribution of the respondents according to service providers' age group. The population aged 31-40 years old is the highest proportion comprising 17 or 34% of the total respondents. The population aged below 30 years old consists of 15 or 30% of respondents. The respondents aged 41-50 years old are made up of 13 or 26%, while those 51 years old and above contain 5 or 10% of respondents.

Table 6.0 Profile of Customers in terms of Marital Status

Status	FREQUENCY	PERCENTAGE %
Single	23	38.98%
Married	34	57.63%
Widowed	2	3.39%
Total	59	100%

Table 6.0 shows the distribution of the respondents according to customers' marital status. The largest quantity of the surveyed population is married individuals, constituting 34 or 57.63% of the total respondents. Singles respondents make up 23 or 38.98% of the population. While the widowed respondents are the minority within the population with a total of 2 or 3.39%.

Table 7.0 Profile of Small-scale Service Providers in terms of Marital Status

Status	FREQUENCY	PERCENTAGE %
Single	12	24%
Married	34	68%
Widowed	4	8%
Total	50	100%

Table 6.0 shows the distribution of the respondents according to service providers' marital status. The largest quantity of the surveyed population is married individuals, constituting 34 or 68% of the total respondents. Singles respondents make up 12 or 24% of the population. While the widowed respondents are the minority within the population with a total of 4 or 8%.

Table 8.0 Profile of Customers in terms of Years of Residency

Years	FREQUENCY	PERCENTAGE %
Less than a year	0	0%
1 year – 2years	1	1.69%
3 years – 4 years	1	1.69%
5 years and above	57	96.62%
Total	59	100%

Table 8.0 shows the distribution of the respondents according to years of residency. The table shows that the majority of the surveyed population are those who have resided in Butuan City for more than 5 years, indicating a significant portion of respondents have been engaged in acquiring services from service providers. Respondents who have resided for 1-2 years and 3-4 years represent a small portion of the population, with 1 or 1.69%. On the other hand, no respondents were engaged in acquiring services from service providers for respondents who have resided in Butuan City for less than a year.

Table 9.0 Profile of Customers in terms of Previous Experience

I have previously sought services from small-scale providers for my needs	FREQUENCY	PERCENTAGE %
YES	51	86.44%
NO	8	13.56%
Total	**59**	**100%**
I am satisfied with my overall experience with small-scale service providers in the past		
YES	49	83.05%
NO	10	16.95%
Total	**59**	**100%**

Table 9.0 presents the distribution of respondents in terms of previous experiences of the respondents with the small-scale service providers. The majority of the respondents have sought services from small-scale service providers in the past, with a total of 51 or 86.44%. This suggests that the surveyed respondents are more likely to utilize services offered by small-scale service providers rather than from large corporations. Moreover, most of those who have engaged with small-scale service providers express satisfaction with their overall experiences, comprising 49 or 83.05% of respondents. However, it is notable that some of the respondents, constituting 10 or 16.95% express dissatisfaction with

their overall experiences with small-scale service providers. Even though this segment is smaller compared to the satisfied group, it still represents a group of the population that may have encountered issues, challenges, or shortcomings from the small-scale service providers.

Table 10.0 Profile of Small-scale Service Providers in terms of Years of Experience

Years	FREQUENCY	PERCENTAGE %
Less than 1 year	12	21.8%
1-2 years	3	5.5%
3-4 years	7	12.7%
5 years and above	33	60%
Total	50	100%

Table 10.0 presents the distribution of respondents in terms of the service providers' years of experience. The majority of the respondents, with a total of 33 or 60% have been providing services individually for 5 years or more. This means that most of the respondents are experienced in their respective jobs. Meanwhile, 12 or 21.8% of the respondents have experience of being service providers for less than a year. Additionally, 7 or 12.7% of respondents also have experience of 3 to 4 years. While 3 or 5.5% of respondents have 1 to years of experience of being service providers.

5.2 Analysis of the Current Service Provision of Small-Scale Service Providers in Butuan City

Table 11.0 Frequency Distribution of Customers in terms of Information Search

I typically search for small-scale service providers through: (Select all that apply)	FREQUENCY	PERCENTAGE %	RANK
Word-of-mouth recommendations	43	39.1%	1
Social Media platforms	33	30%	2
Online platforms (website, apps)	26	23.6%	3
Local advertisements (newspapers, flyers, etc.)	6	5.5%	4
Other (Friends, Co-workers) TOTAL	2 110	1.8% 100%	5

Table 11.0 presents the distribution of respondents in terms of information search on how respondents typically search for small-scale service providers, it also shows their respective ranks based on the most selected method. The most common method selected by respondents is through word-of-mouth recommendations, with 43 or 39.1% of respondents. This indicates that most of the respondents preferred personal recommendations from friends, family, or acquaintances. Next on the rank is the social media platforms method, cited by 33 or 30% of respondents. This means that there are respondents who seek recommendations and access reviews and testimonials from social media platforms. The online platforms, specifically websites and mobile apps rank third, with 26 or 23.6% of respondents utilizing this method.

Table 12.0 Frequency Distribution of Small-scale Service Providers in terms of Search Methods

I typically search for job opportunities as a small-scale service provider through:	FREQUENCY	PERCENTAGE %	RANK
Connections with acquaintances	43	62.3%	1
Visiting local businesses or clients in person	11	15.9%	2
Advertising of services independently	8	11.6%	3
Online job portals	7	10.1%	4
Others (pls specify)	0	0%	
Total	69	100%	

Table 12.0 presents the distribution of respondents in terms of search methods on how small-scale service providers typically search for job opportunities. The most common method is through connection with acquaintances, with 43 or 62.3% of respondents relying on personal networks to find job opportunities. Some of the respondents which comprise

11 or 15.9% prefer to visit local businesses or clients in person to inquire about job opportunities. The 8 or 11.6% of respondents choose to advertise their services independently as a means of attracting job opportunities. A minority of 7 or 10.1% of respondents utilize online job portals to search for job opportunities as small-scale service providers.

Table 13.0 Frequency Distribution of Small-scale Service Providers in terms of Search Methods

Question Statement	Weighted Mean	Standard Deviation	Category Value	Interpretation
I typically submit job applications or inquiries on a weekly basis.	3.80	3.47	3.80	Agree

Table 13.0 indicates that respondents typically submit job applications or inquiries every week, with a weighted mean of 3.80. This implies that there are small-scale service providers who are actively engaged in the job search process.

Table 14.0 Mean Distribution of Customers in Terms of Challenges Encountered

Question Statements	Weighted Mean	Standard Deviation	Category Value	Interpretation
I have encountered challenges or difficulties when trying to find small-scale service providers.	3.71	3.68		
I have experienced issues with the reliability or professionalism of small-scale service providers due to the lack of background checks.	3.66	3.62	3.76	Agree
I find it challenging to find a variety of skills available from small-scale service providers in my area due to limited connections.	3.90	3.86		

Table 14.0 presents the weighted means of responses to statements regarding the challenges encountered by the customers in hiring a service provider. The statement "I find it challenging to find a variety of skills available from small-scale service providers in my area due to limited connections" got the highest mean of 3.90 with an interpretation of "agree". This suggests that there are limited options in the types of services offered nearby. The statement "I have encountered challenges or difficulties when trying to find small-scale service providers" got an average mean of 3.71 with an interpretation of "agree". This implies that limited connections with people are the common factor why it is hard for customers to find small-scale service providers. The statement "I have experienced issues with the reliability or professionalism of small-scale service providers due to the lack of background checks" got the lowest mean of 3.66 with an interpretation of "agree". This implies that concerns about the quality or trustworthiness of services offered by small-scale service providers are rooted in inadequate screening processes.

Table 15.0 shows the distribution of respondents in terms of challenges experienced by the service providers in seeking employment. The most common challenge reported is limited job opportunities, with 27 or 27.8% of respondents. Financial constraints preventing job search efforts are also a challenge for 21 or 21.6% of respondents. The respondents with a total of 18 or 18.6% also cite that a lack of necessary skills or qualifications is a challenge in securing employment. Some respondents 17 or 17.5% face challenges in accessing job information or resources. A small number of respondents 12 or 12.4% are also experiencing discrimination or bias from employers or clients. Finally, 2 or 2.1% of respondents mentioned other challenges such as discontent with the job itself.

Table 15.0 Frequency Distribution of Small-scale Service Providers in terms of Challenges Encountered

I usually encounter these challenges when seeking employment as a small-scale service provider (Select all that apply)	FREQUENCY	PERCENTAGE %	RANK
Limited job opportunities	27	27.8%	1
Financial constraints preventing job search efforts	21	21.6%	2
Lack of necessary skills or qualifications	18	18.6%	3
Difficulty in accessing job information or resources	17	17.5%	4
Discrimination or bias from employers or clients	12	12.4%	5
Others (not content with the job)	2	2.1%	6
Total	97	100%	

Table 16.0 Frequency Distribution of Customers in Terms of Choice

I typically search for small-scale service providers through: (Select all that apply)	FREQUENCY	PERCENTAGE %	RANK
Quality of Work	49	25.5%	1
Price	47	24.5%	2
Availability	39	20.3%	3
Reviews and recommendations	30	15.6%	4
Location proximity	25	13%	5
Others (Experience of related work, Behavior)	2	1.1%	6
TOTAL	192	100%	

Table 16.0 shows the distribution of the respondents in terms of factors influencing the choice of customers in finding small-scale service providers. The most common factor selected by the respondents is the Quality of Work, with 49 of 25.5% of respondents. This implies that most of the respondents choose service providers based on how good their work is. Next in rank is the Price comprising 47 or 24.5% of respondents. This means that customers will choose a service provider based on how much the service costs. The third in rank is the Availability, with 39 or 20.3% of respondents. This implies that some customers will look for service providers who are easy to reach and can do the job when needed. The fourth in rank is the Reviews and Recommendations consisting of 30 or 15.6% of respondents. This suggests that other customers rely on what others say about the service provider's work. Location Proximity is fifth in rank, with 25 or 13% of respondents. This implies that some customers prefer service providers who are nearby. The last in rank is Others which respondents specifically mentioned the experience of related work and behavior, comprising 2 or 1.1% of respondents. This means that a very small number of respondents consider factors like the service provider's experience or how they behave.

Table 17.0 shows the distribution of respondents in terms of support and resources received by the service providers. Among small-scale service providers surveyed, 26 or 52% have encountered assistance or support in their job efforts, while 24 or 48% of respondents have notThis indicates that most of the respondents have received some form of assistance, such as training, programs, job fairs, or other support services, to aid them in their search for employment opportunities. Yet, almost half of the respondents have not encountered such support.

Table 17.0 Frequency Distribution of Small-scale Service Providers in terms of Support and Resources

I have encountered assistance or support in my job search efforts as a small-scale service provider (e.g., training, programs, job fairs, etc.)	FREQUENCY	PERCENTAGE %
YES	26	52%
NO	24	48%
Total	50	100%

Table 18.0 Mean Distribution of Small-scale Service Providers in terms of Support and Resources

Question Statement	Weighted Mean	Standard Deviation	Category Value	Interpretation
I find the available resources and support for small-scale service providers helpful in finding employment	3.52	3.40	3.52	Agree

Table 18.0 shows that respondents find the available resources and support for small-scale service providers helpful in finding employment, with a weighted mean of 3.52 with an interpretation of "agree". This suggests that most of the respondents agreed that the support and available resources such as training programs and other assistance initiatives are beneficial for their job search efforts.

Table 19.0 Mean Distribution of Customers in terms of Technology Adoption

Question Statements	Weighted Mean	Standard Deviation	Category Value	Interpretation
I prefer to use online platforms or apps to search for and engage with small-scale service providers.	3.97	3.94	4.02	Agree
I would prefer a centralized website with geolocation-based services to find and connect to nearby small-scale service providers.	4.07	4.02		

Table 19.0 shows the preferences of customers regarding technology adoption. The statement "I would prefer a centralized website with geolocation-based services to find and connect to nearby small-scale service providers" got the highest mean of 4.07 with an interpretation of "agree". This suggests that most of the respondents have a desire for a streamlined platform that offers recommendations based on location, enabling individuals to easily locate service providers. The statement "I prefer to use online platforms or apps to search for and engage with small-scale service providers" got the lowest mean of 3.97 with an interpretation of "agree". This indicates that customers are inclined to utilize digital platforms for reaching small-scale service providers

Table 20.0 Mean Distribution of Small-scale Service Providers in terms of Technology Adoption

Question Statements	Weighted Mean	Standard Deviation	Category Value	Interpretation
I believe that technology adoption is important for the future success of small-scale service providers in finding employment	4.48	4.00	4.41	Agree
I feel confident in adapting to new technologies and incorporating them into my work as a small-scale service provider	4.46	3.98		
I plan to explore or implement specific technologies or digital tools in my service provision to enhance competitiveness in the job market.	4.30	3.82		

Table 20.0 shows the service providers' response in terms of technology adoption. The statement "I believe that technology adoption is important for the future success of small-scale service providers in finding employment" got the highest weighted mean of 4.48 with an interpretation of "agree". This suggests that most of the service providers agreed on the need to embrace technological advancement. The statement "I feel confident in adapting to new technologies and incorporating them into my work as a small-scale service provider" got a weighted mean of 4.46 with an interpretation of "agree". This reveals a positive attitude towards adapting technological innovation to enhance their technological capabilities. The statement "I plan to explore or implement specific technologies or digital tools in my service provision

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to enhance competitiveness in the job market" has the lowest weighted mean of 4.30 with an interpretation of "agree". This implies that respondents demonstrate an intention to adapt technologies or digital tools in their service provision.

5.3 Features and functionalities of the proposed Geolocation-based Service Provider System.

Table 21.0 reveals the preferences of customers for features and functionalities in a platform designed to aid customers in searching and hiring for small-scale service providers. Most respondents prioritize functionality that enables geolocation-based searches for nearby providers with 43 or 14.2 of respondents.Real-time availability and booking systems with 41 or 13.5% of respondents, and detailed provider profiles with reviews and ratings comprised 39 or 12.9% of respondents. Direct communication channels with 33 or 10.9% of respondents, advanced search options, and user-friendly interfaces are also valued for facilitating seamless navigation and interaction with 32 or 10.6% of respondents. Additionally, mobile responsivenesswith 31 or10.2 % of respondents, and access to customer support services with 29 or 9.6% of respondents are considered essential for catering to users' preferences and ensuring a positive user experience. These preferences collectively underscore the significance of convenience, accessibility, and transparency in platform design, aiming to facilitate efficient and satisfactory engagements between customers and small-scale service providers.

Table 21.0 Frequency Distribution of Customers' preferences in terms of Features and Functionalities

What features and functionalities would you prefer in a platform designed to help customers find and hire small-scale service providers? (Select all that apply)	FREQUENCY	PERCENTAGE %	RANK
Geolocation-based search for nearby service workers	43	14.2%	1
Real-time availability and booking system	41	13.5%	2
Detailed service provider profiles with reviews and ratings	39	12.9%	3
Direct communication channels with service providers	33	10.9%	4
Advanced search and filtering options for specific criteria	32	10.6%	5
User-friendly interface for seamless navigation and booking	32	10.6%	5
Mobile-responsive design for easy access on smartphones	31	10.2%	6
Customer support services and help resources	29	9.6%	7
Notifications for booking confirmations and updates	23	7.5%	8
TOTAL	303	100%	

Table 22.0 Frequency Distribution of Service Providers' Preferences in terms of Features and Functionalities

What features and functionalities would you prefer in a platform design to help small-scale service providers increase their visibility to customers (Select all that apply)	FREQUENCY	PERCENTAGE %	RANK
Profile creation and management with detailed service information	35	18.5%	1
Service listings with availability and scheduling options	29	15.3%	2
Analytics and insights for performance tracking	29	15.3%	3
Mobile responsiveness for on-the-go management	25	13.2%	4
Integrated communication tools for client interaction	20	10.6%	5
Review and rating system for feedback and credibility	20	10.6%	6

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Booking management tools for efficient scheduling	18	9.5%	7
Customization options for personalized profiles	13	6.9%	8
Total	189	100%	

Table 22.0 shows the top preferences among small-scale service providers for features and functionalities in a platform design aimed at increasing visibility to customers. Profile creation and management with detailed service information appear as the most selected feature with 35 or 18.5% of respondents, followed by service listings with availability and scheduling options and analytics and insights for performance tracking with 29 or 15.3% of respondents. Third on rank is the mobile responsiveness for on-the-go management with 25 or 13.2% of respondents. The fourth rank is the integrated communication tools for client interaction and review and rating system for feedback and credibility with 20 or 10.6% of respondents. The fifth rank is the booking management tools for efficient scheduling with 18 or 9.5% of respondents. Lastly, are customization options for personalized profiles with 13 or 6.9% of respondents.

5.4 System Development Process of the Proposed Online Geolocation-Based Service Provider System
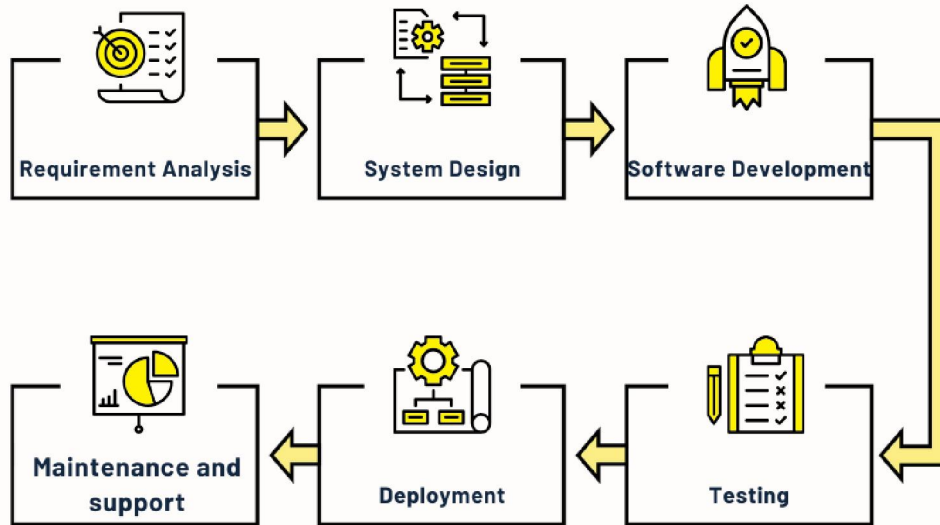

Figure2.0 – System Development Process of the Proposed System

Figure 2.0 illustrates the System Development Processes for an Online Geolocation-based Service Provider System. It starts with the Requirement Analysis phase where stakeholders, including customers and service providers, are engaged through surveys to gather insights into their needs and preferences. The process is comprehensively documented to guide subsequent development phases. The System Design phase translates these requirements into a detailed blueprint, defining system architecture, database schemas, UI/UX designs, and integrating geolocation algorithms with services like Google Maps API. The Software Development phase involves actual coding, implementing server-side logic, database interactions, and API integrations, alongside creating a user interface with technologies such as HTML, CSS, and JavaScript, and ensuring the database supports user data and geolocation information. The Testing phase includes unit, integration, system, and User Acceptance Testing (UAT) to ensure the system is robust and reliable, producing detailed test reports to fix any issues. Deployment involves preparing the production environment, conducting final testing, and providing user training and documentation, culminating in the system's release. Finally, the Maintenance and Support phase ensures continuous functionality and security through monitoring, bug resolution, updates, and regular security audits, maintaining system reliability and user satisfaction over time.

5.5 Recommendations and suggestions for the proposed Geolocation-based Service Provider System.

The customers' recommendations and suggestions for the proposed online geolocation-based service provider system were also implored. The majority of the customers suggested that verification of small-scale service providers is necessary to prevent the creation of new accounts if there are previous back jobs with clients. This suggestion will help ensure trust and reliability in the platform. Another recommendation is to specify the time of completion for certain projects. It is also suggested that the profiles of small-scale service providers should be visible to potential customers. Lastly, the customer recommended that the platform should be user-friendly and easy to access.Additionally, the service providers' recommendations and suggestions for the proposed geolocation-based service provision system were also solicited. They recommended that the system should be easy to use, ensuring a smooth and straightforward experience for users. Another suggestion is that proper training should be provided from beginning to end to users, to ensure that users are equipped with the necessary knowledge and skills to utilize the system.

VI. CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the results of the study present that both small-scale service providers and customers encountered several challenges in searching for employment or searching for service providers, which led them to agree that the Online Geolocation-based Service Provider System can be used to simplify locating and hiring small-scale service providers in Butuan City. The proposed system can enhanceits functionality by diversifying the range of services available on the platform. It is intended to cater broader audience, and continuously improving the user interface and functionality. It will ensure a seamless and intuitive experience for both small-scale service providers and customers by introduce geofencing capabilities within the platform to enable targeted marketing and personalized notifications based on user's geographic locations. It can alsoforge partnerships with local businesses to promote the adoption and utilization of the online geolocation-based service provider system.

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